

FIG. 1

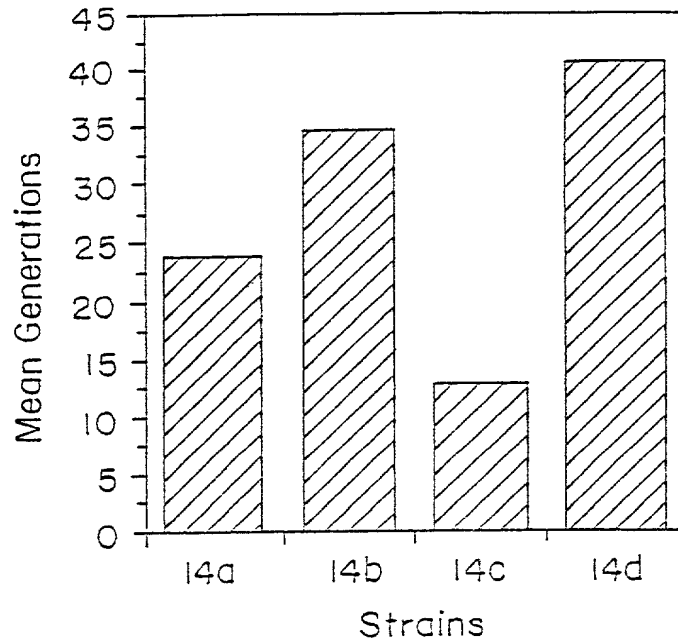


FIG. 2A

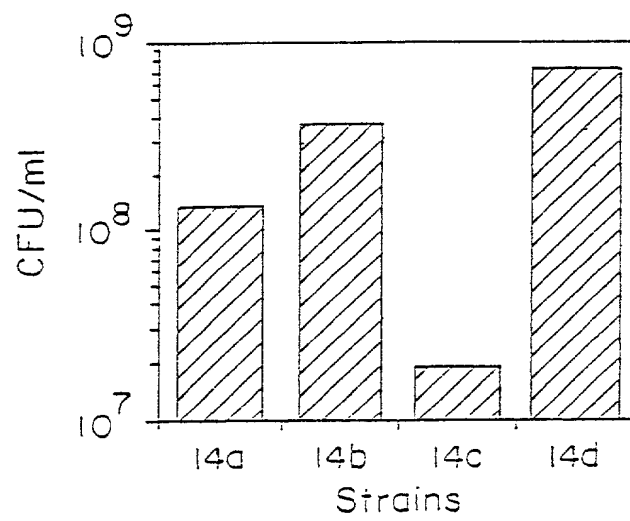


FIG. 2B

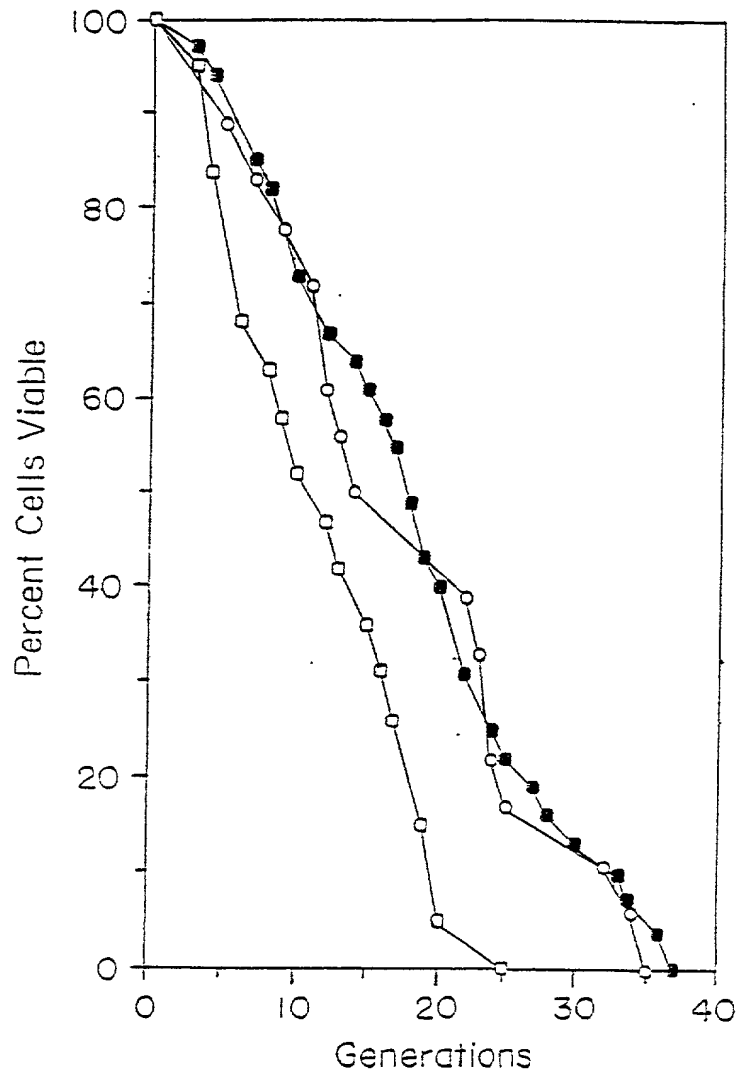


FIG. 3

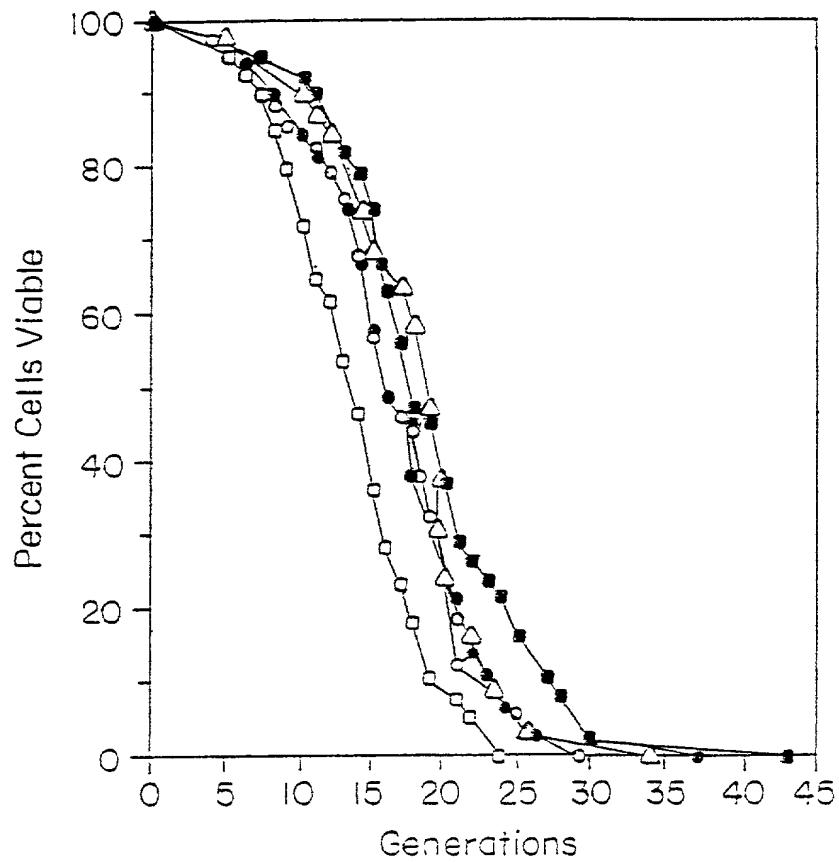


FIG. 4

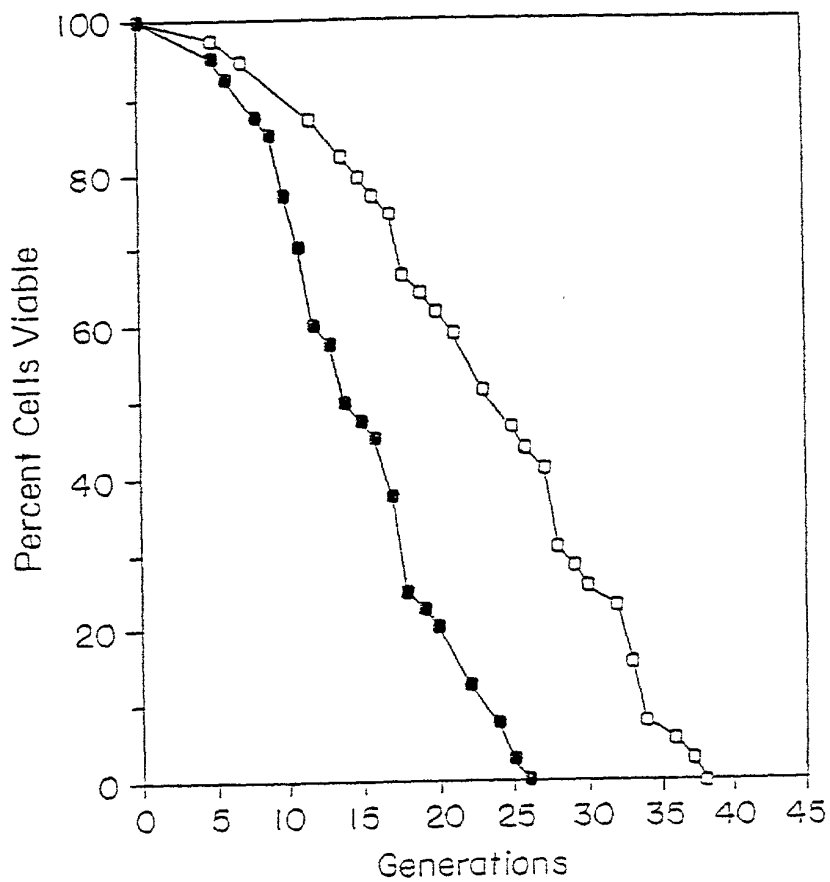


FIG. 5

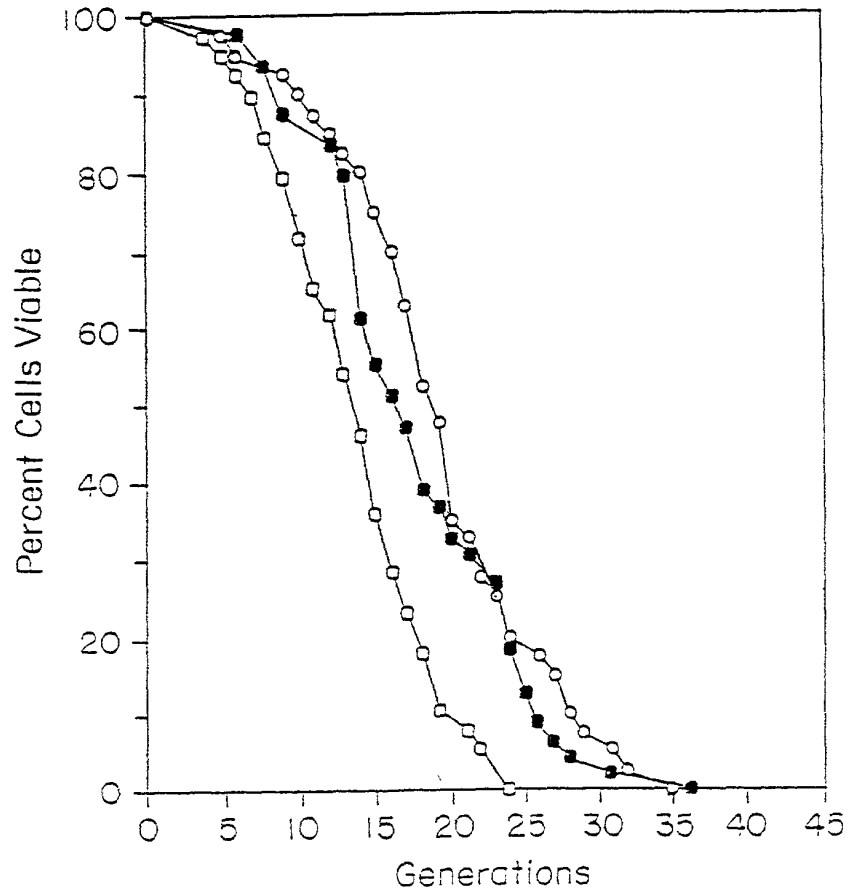


FIG. 6

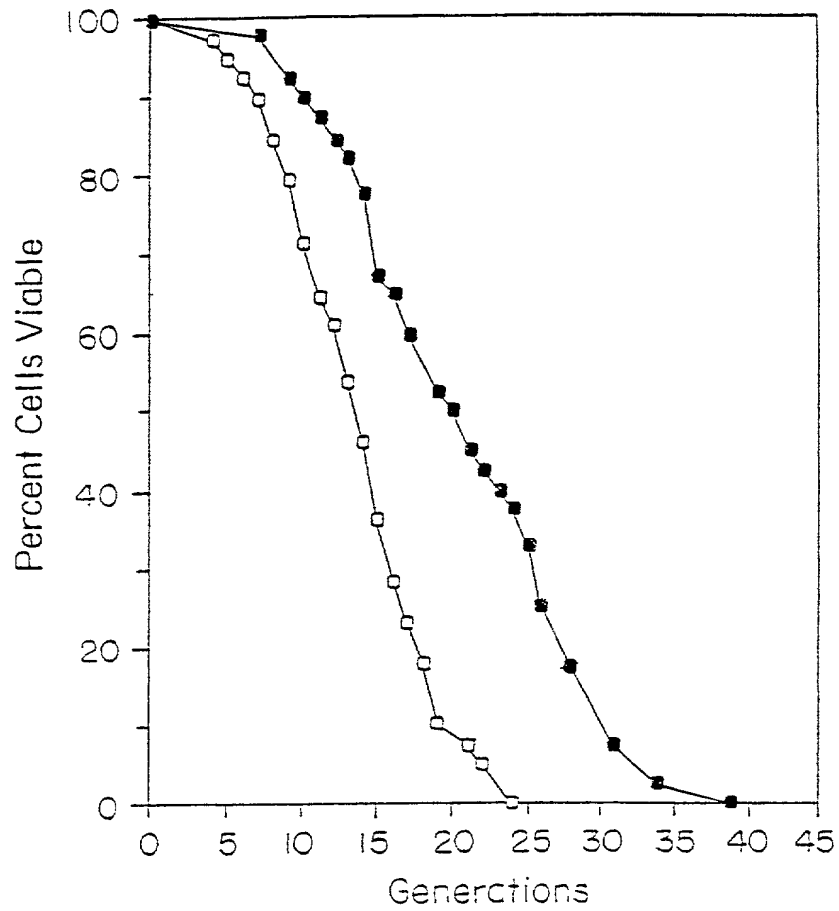


FIG. 7

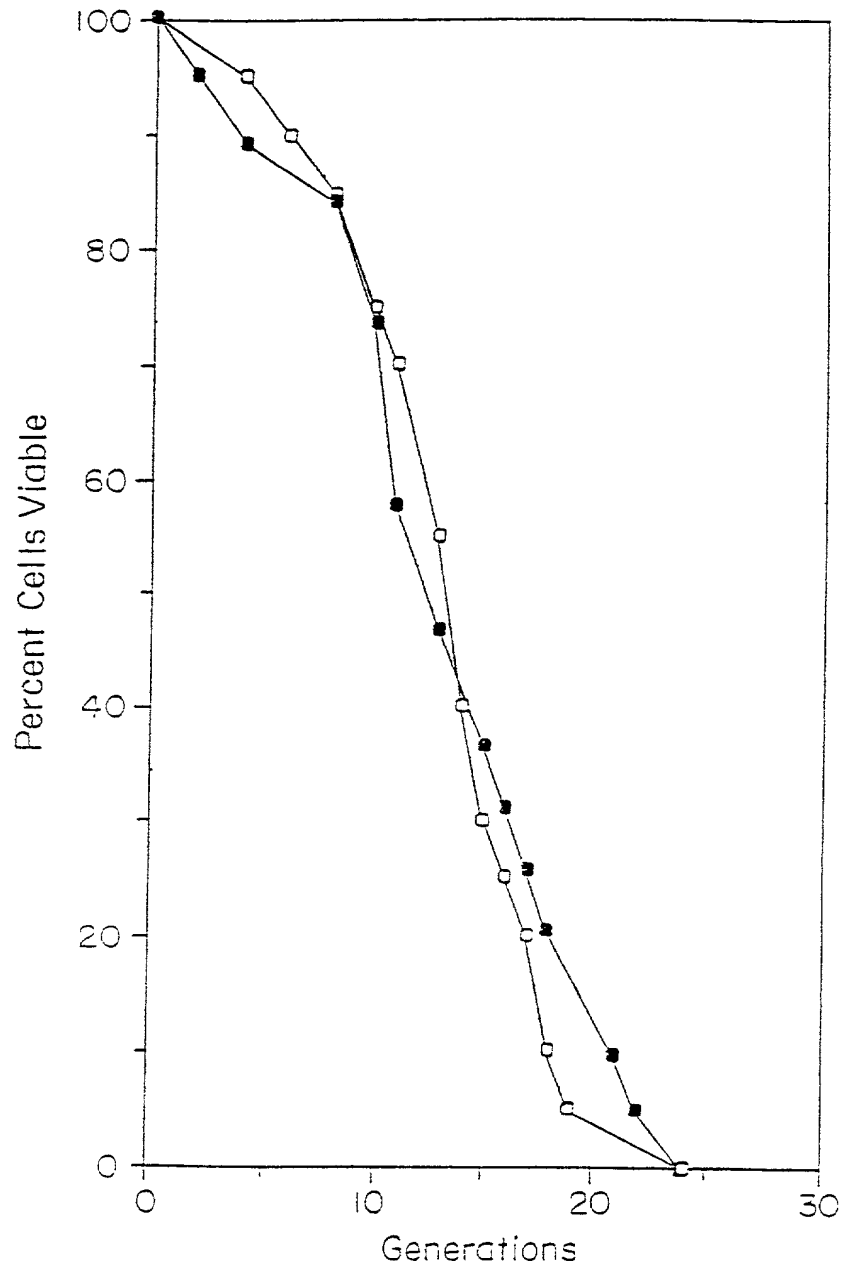


FIG. 8



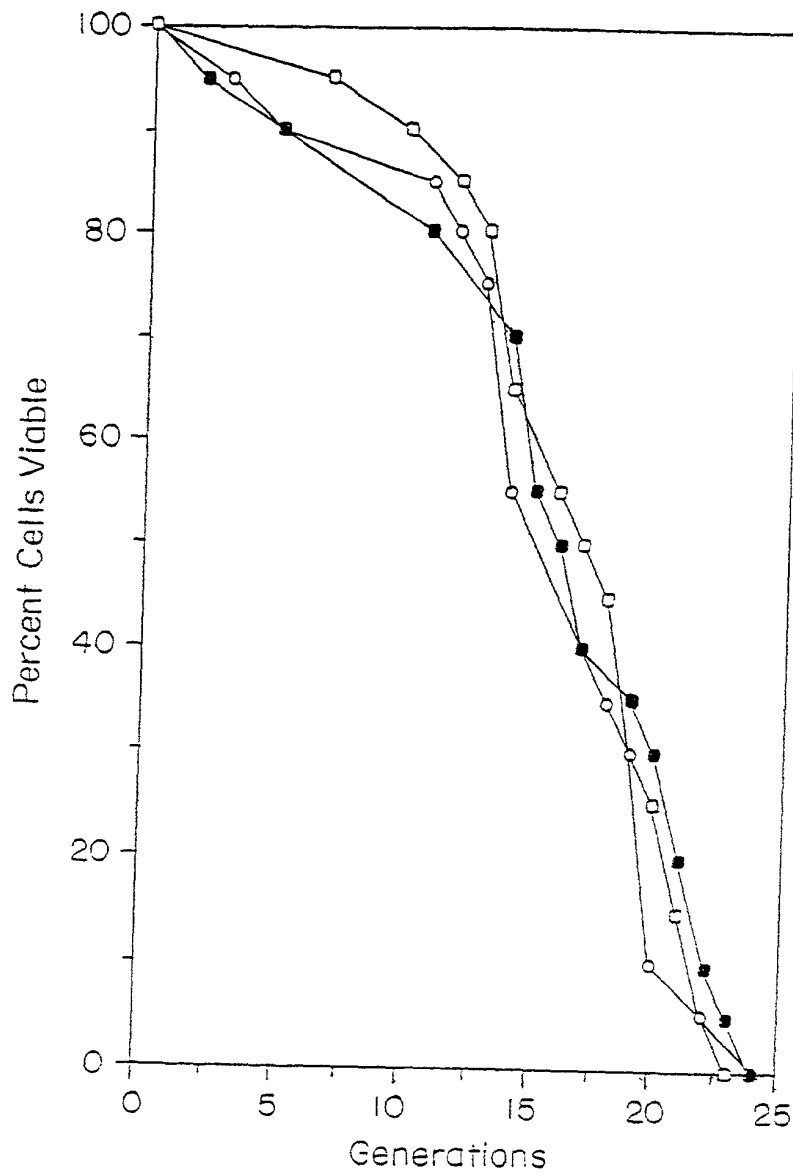


FIG. 9

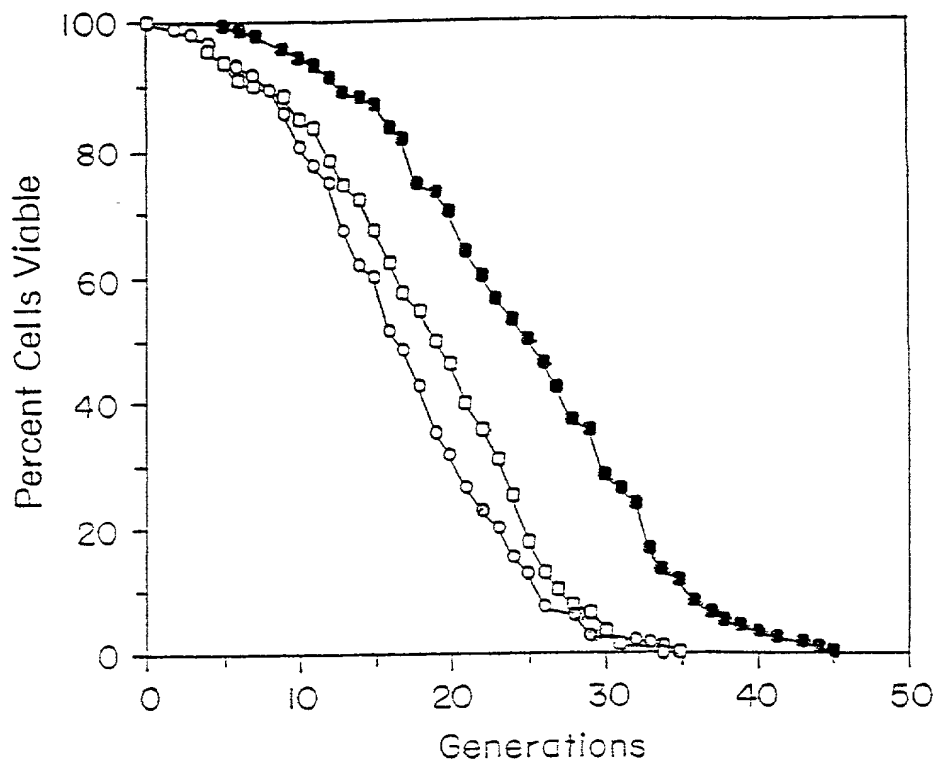


FIG. 10

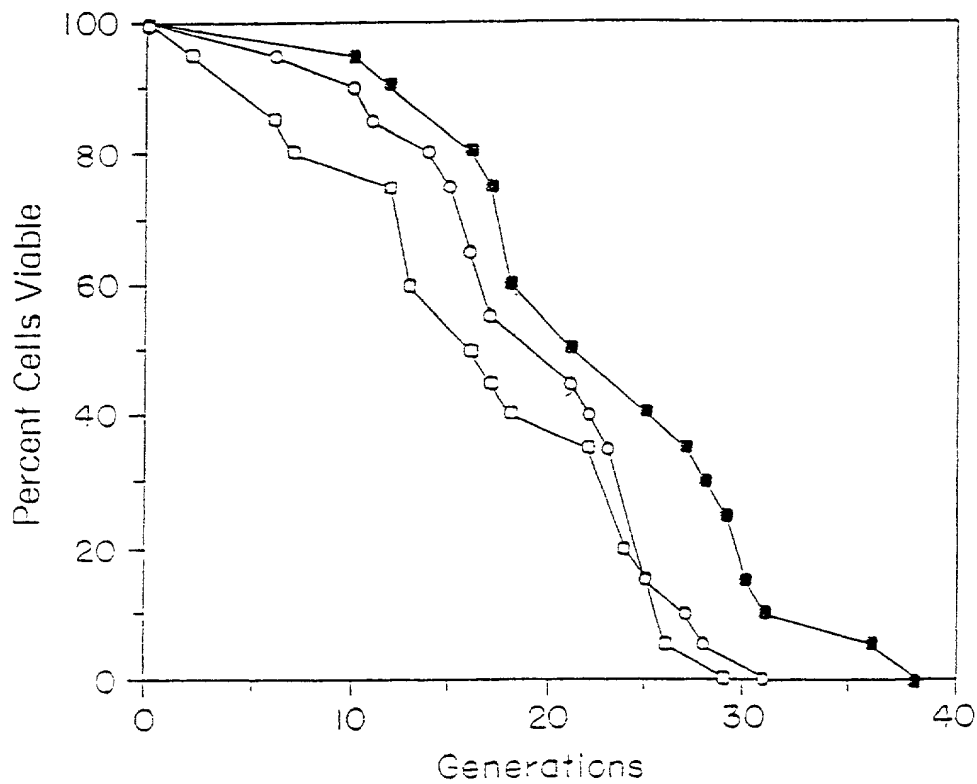


FIG. 11

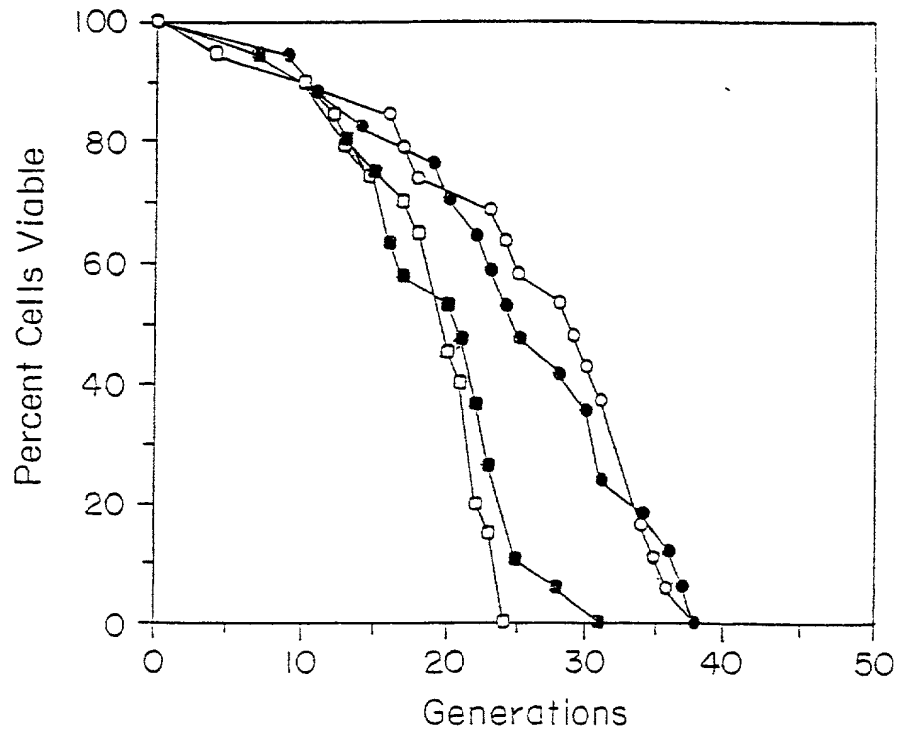


FIG. 12

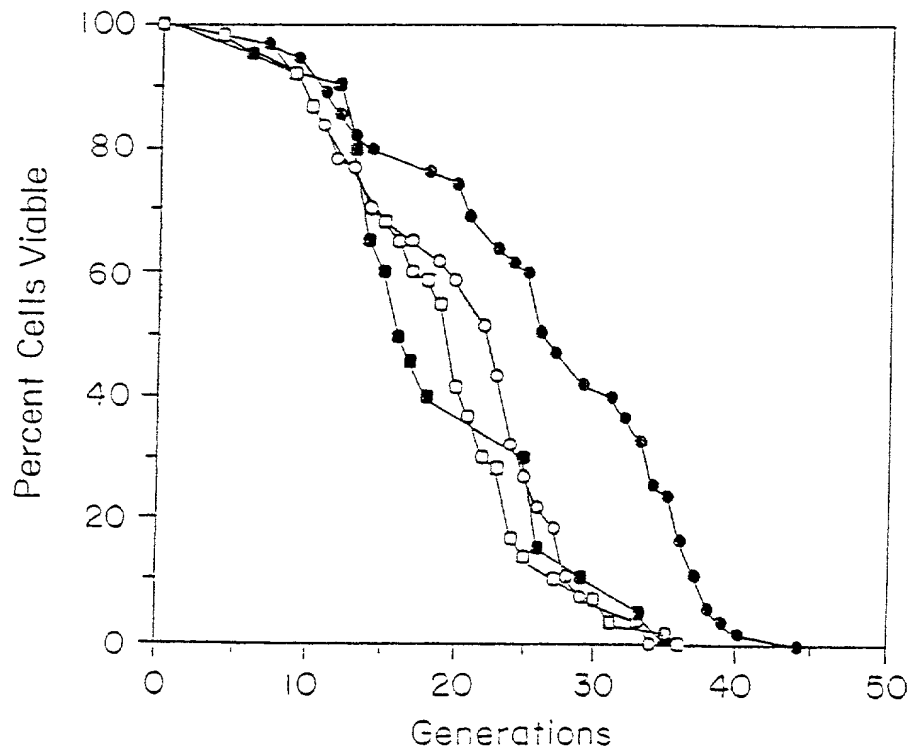


FIG. 13

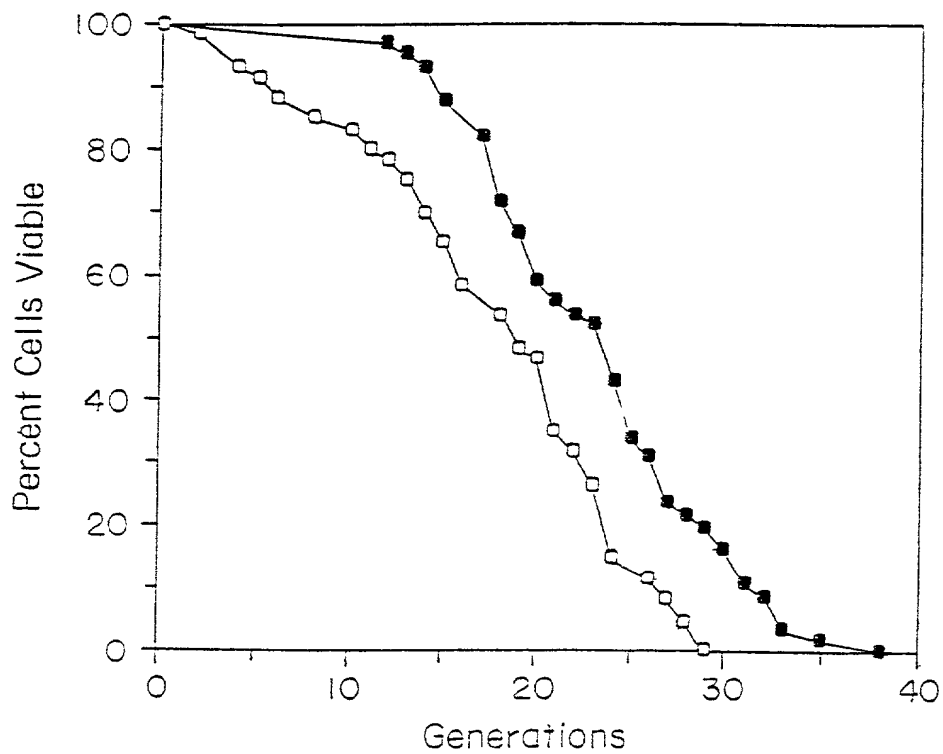


FIG. 14

FIG. 15A

FIG. 15B

1/1  
AAG CTT TAA CGG GAT CTT CTA ACA AAT AGC ATA ATA ACC AAA AAC CAG CTT CAG TGG  
K L \* R G I, F \* Q T' T' N I S I \* A \* H N N Q K K P A S V G  
S F N T G S S N K \* I I \* A \* H N N Q K K P A S V G  
A I, T G S S N K \* I I \* A \* H N N Q K K P A S V G  
61/21  
GAT CAG CCT ATC GAC ACG CCT TTT TTA GCG GTC TAA CAA TCT CCG TTT ATG TCG TAT GGA  
D Q P L S R H A F F S G L T S N N I S V Y V W N  
I S A Y R A F F S G L T S N N I S V Y V W N  
S A Y R A F F S G L T S N N I S V Y V W N  
121/41  
ATT TCT ATA CTT GAC CCT ACC TTA TTT CTC GAA TAT GCC TAT AAG GAT TTT CTC GAA AGA  
I S I L I L T P T L F F S R I C L \* G F S R K K  
F L Y T \* P Y L I S R I C L \* G F S R K K  
F Y T \* P Y L I S R I C L \* G F S R K K  
181/61  
AGG GCT TCG GGA AAG AGG CGC CTC AGG CAA AAA TGA GCA AAA AAA AAA AAA AAA  
R A S G R E K E A P Q A K Q K N E S K K K K K K R  
G L R E K E A P Q A K Q K N E S K K K K K K R  
G F G R E K E A P Q A K Q K N E S K K K K K K R  
241/81  
GAT TCG AAG ATC TAT GAA AAA TTT ATG CAG ATT CGT TGA GAG TTA TAA GGA TTT TAC TCT  
D S K I Y M K N I Y A D S L I R V E S V I R I L F  
I R S M K N I Y A D S L I R V E S V I R I L F  
F E D L \* K I Y A D S L I R V E S V I R I L F  
301/101  
TTA TGG TTA TAG GTT TCA TTC TAA AAT CAA GCA TAA ATT TTG TGT TTT GTC TTC CTC TTT  
L W L \* V S H I L K S S I K H A \* I F C V F C L P L F  
Y G Y I G F F I L K S S I K H A \* I F C V F C L P L F  
M V I G F F I L K S S I K H A \* I F C V F C L P L F

FIG. 16A

FIG. 16B

361/121 TCC TGT CCT CTT TTT TTG CCA TCC TCT GTC GCC ATT GAA GTC GAA CTT TAT AGA TAG ATT  
S C P L F F C H P S L C R V A I E K S N F L \* I D R F I  
L S S P F F A I L C R H \* S R T L \* I D L

421/141 TAC TCT TGA TTC TCA CGC ATC TCA GGC CAC CTG GAC ACT CTA CAT GGT TGT GAT TGT TCT  
Y S \* F S H A S Q A T W T L Y M V V I V L S  
T L S H A S Q A T W T L Y M V V I V L S

481/161 CTT TCT CAG TTA TCG AAA TTG ATC CTA GGC TTA TAC TCC AAA ATC GGC TCT GCA CAC GCC  
L S Q L S K N \* S \* A L G L Y T P K S A L H T P L  
F L S Y R N \* S \* A L G L Y T P K S A L H T P L

541/181 TTA TTT TGG TTT CAC TTT ACT AAC ACA TTT TTT TAT TCA ATC AGA TCA ATA ACG  
L F F C G F T L Y \* H N I L F L F N Q I N N E  
I F V S L Y \* H N I L F L F N Q I N N E

601/201 AAC CAT TTC CAT CTG CCG ACT CAG CAT CGA TTT TAA CTA CGT CTA CAT CAA ATA ACT CCT  
N H F L C R L S I D F N \* F N Y V Y I K \* L L  
T I S I C R L S I D F N \* F N Y V Y I K \* L L

661/221 TAA TGT CTT ACA ATC ATC AGC CTC AAC TAT CTA TTA ACT CCG TCC AAT CAC TCT TGG AGC  
\* C L I I S L N Y L L \* L Y \* L R P I T L L E P  
N V L Q S S A S T I Y \* L R P I T L L E P

721/241 CCC TGA CCC CTT TGG GCC AGA TGA ATA ACA AAA GAA ACC ATC AAA AGG CTC ATT  
P \* P L R L W A R \* I T K E T I K R L I  
R D P S A F G P D E \* Q K K P H Q K A H S  
V T P P L G Q Q M N N K R N H Q K A H S

FIG. 16B



FIG. 16C

781/261 CGC TTG ATC TCT CTG GTT TTA ATC AGT TCA TAT CAT CGA CAC AAT CTC CCT TGG CTT TGA  
 R L \* I S L W F V L \* S V H I I S Y H R C H N L P W L \*  
 A L D S L S G F F N Q F I S S T Q S P L A L M  
 841/281 TGA ATA ATA CAT CAA CAT CGA ATT CTG CTA ACT CTT TTT CCC CGA ATC CTA ATG CTG CTA  
 \* I I H Q H R I E F C \* L F F P P R I L M L L  
 E \* Y I N T S N S A N S F S P N P N A A S  
 901/301 GCA ACT CCA CTG GGC TTT CAG CCT CAA TGG CAA ATC CTC CAG CCA TTT TAC CAT TAA TCA  
 A T P L H W A F S L S A S M A N P P A I L P L I N  
 Q L S T G L S A S A S M A N P P A I L P L I N  
 961/321 TTG ATC TGG AAA TGG ATG GTC CCA GGA GAA AAT CAA GCC ACG ATT TCA CGG TTG  
 ATG AGT I I W K W M V P Q E K I K S S S H S T I N Q  
 \* V \* S G N G W S Q R R K S S H D F T V  
 E F D L E M D G P R 1051/351  
 1021/341 TTG CTC CTA ACT CTG GTG TCA ATA CCT CCA GTT TAA TTA TGG AAA CAC CAT CCT CTT  
 L L L R T L W C Q Y L S I P P V \* L Y G N T P S S  
 C S F E L S G V N T S I, I M E T P S S  
 A P S N S G V N T S 1111/371  
 1081/361 CAG TGA CTC CTG CTG CAT CTC TCA GAA ATT TTA GCA ATA GTA ATA ATG CTG CTT CCA AAT  
 Q \* L L L H L S E I L A I V I M L L P N  
 S D S C C I S Q K F \* Q \* S N S N A A S K C  
 V T P A A S L R N F S N S N A A S K C  
 1141/381 GTG GAG TGG ATA ATT CGT CAT TTG GTT TGA GCT CAA CGT CTT CAT CTA TGG TCG AAA  
 V E W I I R H L V \* A Q R L H L W S K  
 W S G \* F V I W P E \* L N V F I Y G R N  
 G V D N S S F G L S S T S S M V E I

FIG. 16C

105444-223600

1201/401 TCA GCG CAC TAC CCC TTA GAG ATC TGG ATT ATA TCA AAC TTG CCA CTG ACC AGT TTG GCT  
 S A H Y P P L \* R D L Y I S Q T C H \* P V W L A  
 1261/421 GCC GTT TTC AAA AAA AAT TAG AAA CCC P V N T C L A T D Q F G C  
 A V F S S K K K I R E T P CCA GTG AAT CCA ATA TGG TGA GAG ACT TGA  
 P F F L Q K K K I L E T P CCA ATA TGG TGA GAG ACT TGA  
 1321/441 TGT ATG AAC AAA TTA AGC CAT TTT TCT TAA CTG CCG ATC CGT TCG GTA ACT ATT  
 C M N K L \* A I F F L L D L I I L D P F G N Y L  
 V \* T N Q I K P F L L L I I L D P F G N Y L  
 1381/461 TGG TTC AAA AAC TAT GCG ATT ATT TAA CTG CCG AGC AAA AGA CAT TAT TAA TAC AAA CAA  
 W F K K K N Y A I I F L T A L P S K R A K D I I L I Q T I  
 G S K K T M C L Y L T A L P S K R A K D I I L I Q T I  
 1441/481 TAT ATC CAA ATG TTT TCC AAA TAT CAA TCA ATC AGT ACG GAA CTC GTT CCT TAC AGA AAA  
 Y I Q K C F P N I S I N Q S I S V R N S F L L Q K I  
 1501/501 TTA TAG ACA CTG TCG ATA ACG AAG TTC AAA TCG ATC TCA TTA TTA AGG GAT TTT CCC AAG  
 L \* T H C R \* R S S V Q I D L I I K G F S O E  
 Y R D T V D N E V Q I D L I I K G F S O E  
 1561/521 AAT TTA CTT CGA TTG AGC AAG TGG TTA CTT TGA TAA ACG ATC TTA ATG GTA ACC ATG TGA  
 N L L F D \* A S V V T L I N D L N G N H V I  
 I Y F S I E Q V V T L I N D L N G N H V I

FIG. 16D

1621/541  
 TTC AAA AGT GTA TTT TCA AAT TCT CGC CAT CAA AAT TTG GTT TCA TCA TAG ATG CTA TTG  
 F K S V Y I F F Q I L S A I I K I W F F I S S \* R C Y L L  
 Q K C I F K P S K F G F I I D A I V  
 1681/561  
 TAG AAC AAA ATA ATA TTA CCA TTT CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA  
 \* N K I L S H Y H I T I S T L Y Y P \* T W L L C C V L Q K  
 R T K N I I T I S T CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA  
 E Q N I I T I S T L Y Y P \* T W L L C C V L Q K  
 1741/581  
 AAT TAC TAA GCG TTT GTA CTC TAC AAC AAA TTT TCA AAA TTT CTG TGA AAA TTG TGC AGT  
 N Y \* A F L Y S T L Q I F K I S V K I V Q F  
 I T K S V C T L Q I F K I S V K I V Q F  
 L I S V C T L Q I F K I S V K I V Q F  
 1801/601  
 TCC TTC CTG GAT TAA TCA ACG ATC AGT TCG GTA ATT ATA TCA TCC AAT TTC TGT TAG ATA  
 S F L D \* S T I S V R G N Y I I I S S N F C \* I Y I  
 P S W I N Q R S D Q F G N Y I I I Q F L L D I  
 L P G L I N D Q F G N Y I I I Q F L L D I  
 1861/621  
 TCA AAG AAT TGG ACT TTT ACT TAT TGG CTG AGT TAT TTA ACC GTT TAT CCA ATG AAT TAT  
 S K N W T F T Y W L S Y L \* V I \* P F I I S N E L C  
 Q R I G L D F Y L L A E L F N R L S N E L C  
 K E L D F Y L L A E L F N R L S N E L C  
 1921/641  
 GTC AAC TAT CTT GTT TGA AGT TCT CCT CAA ATG TTG TGG AAA AAT TCA TTA AAA AAT TAT  
 V N Y L V \* S S O Q K C C G K I H \* K I I I  
 S T I L F E V L S S N V V E K F I K K L F  
 Q L S C L K F S S N V V E K F I K K L F  
 1981/661  
 TTA GAA TCA TTA CTG GAT TTA TTG TTA ATA ACA ATG GGG GTG CCT CCC AAA GGA CTG CAG  
 L E S L L W I Y C \* \* Q W G G A S Q P P K G L Q  
 \* N H I T G F I V N N N G G A S Q P P K G L Q  
 R I I T G F I V N N N G G A S Q P P K G L Q

FIG. 16E

2041/681  
TTG CTT CTG ATG ACG TGA TTA ATG CTT CTA TGA ACA TTC TTT TGA CTA CCA TTG ATA TAT  
L L L M T \* L M L L \* T F F \* L P L I Y  
C F \* \* R D \* C F Y E H S F D Y H \* Y I  
A S D D V I N A S M N I L L T T I D I F  
2101/701  
TCA CAG TCA ATT TAA ATG TGC TAA TCA GGG ATA ATT TTG GTA ATT ATG CGT TAC AAA CGC  
S Q S I \* M C \* S G I I L V I M R Y K R  
H S Q F K C A N Q G \* F W \* L C V T N A  
T V N L N V L I R D N F G N Y A L Q T L  
2161/721  
TAT TAG ACG TTA AGA ATT ATT CTC CTC TGC TTG CTT ACA ACA ATA GTA ACG CAA TTG  
Y \* T L R I I L L C L L T T K I V T Q L  
I R R \* E L F S S A C L Q Q K \* \* R N W  
L D V K N Y S P L L A Y N K N S N A I G  
2221/741  
GGC AAA ACA GCT CTA GTA CAT TGA ATT ACG GTA ACT TTT GTA ACG ATT TTT CAT TGA AAA  
G K T A L V H \* I T V T F V T I F H \* K  
A K Q L \* Y I E L R \* L L \* R F F I E N  
Q N S S T L N Y G N F C N D F S L K I  
2281/761  
TTG GTA ACT TGA TTG TCC TTA CAA AAG AAT TAC TTC CAA GTA TTA AAA CTA CAT CCT ATG  
L V T \* L S L Q K N Y F Q V L K L H P M  
W \* L D C P Y K R I T S K Y \* N Y I L C  
G N L I V L T K E L L P S I K T T S Y A  
2341/781  
CAA AGA AAA TTA AGT TGA AAG TTA AAG CTT ATG CAG AAG CCA CAG GTA TAC CAT TCA CTG  
Q R K L S \* K L K L M Q K P Q V Y H S L  
K E N \* V E S \* S L C R S H R Y T I H \*  
K K I K L K V K A Y A E A T G I P F T D  
2401/801  
ACA TAT CTC AAG TCA CTG CAA TGA GTC ATA ACA ATC TTC AAA CGA TTA ACA ACG AAA  
T Y L L K S L Q \* V I T I F K R L T T K  
H I S S S H C N E S \* Q S S N D \* Q R K  
I S P Q V T A M S H N N L Q T I N N E N

FIG. 16F

FIG. 16G

2881/961  
GAT TTA AGC AGC CTG GAT TTA TGA TGA ATG AAA CCG ACA AAA TTA ATG CTA ATC ACT TCT  
D L S S L D L \* M K P T K L M L I T S  
I \* A A W I Y D E \* N R Q N \* C \* S L L  
F K Q P G F M M N E T D K I N A N H F S  
2941/981  
CGC CAT ACT CTA ATG CAA ATA GTC AAA ACT TCA ATG AAT CTT TTG TGC CTC GTA TGC AAT  
R H T L M Q I V K T S M N L L C L V C N  
A I L \* C K \* S K L Q \* I F C A S Y A I  
P Y S N A N S Q N F N E S F V P R M Q Y  
3001/1001  
ATC AAA CCG AAG GTG CAA ACT GGG ATT CAA GTT TGT CAA TGA AGT CGC AGC ATA TTG GTC  
I K R K V Q T G I Q V C Q \* S R S I L V  
S N G R C K L G F K F V N E V A A Y W S  
Q T E G A N W D S S L S M K S Q H I G Q  
3061/1021  
AAG GCC CAT ATA ATC AAG TTA ATA TGA GCC GCA ACG CTA GTA TTT CCA ATA TGC CTG CCA  
K A H I I K L I \* A A T L V F P I C L P  
R P I \* S S \* Y E P Q R \* Y F Q Y A C H  
G P Y N Q V N M S R N A S I S N M P A M  
3121/1041  
TGA ATA CCG CTA GAA CAT CTG ATG AAC TTC AAT TCA CTT TGC CAT AAT ACT TTT TTT TCT  
\* I P L E H L M N F N S L C H N T F F S  
E Y R \* N I \* T S I H F A I I L F F L  
N T A R T S D E L Q F T L P \* Y F F F  
3181/1061  
TTC TTT TTT CCT TCT TAC TGT ACA AAT ATT TTA CGC AGA AAT CAA AGA CAA AAG AAA  
F F F P S Y C T N I L R R N Q R Q K K  
S F S F L L T V Q I F Y A E I K D K R K  
L F L S F L L Y K Y F T Q K S K T K E K  
3241/1081  
AAT AAA AAA TAA AAA ATA AAA AAT TCA ACT AAG CAA TGA CGT CCT ACT AAA GTC CCA AAA  
N K K \* K I K N S T K Q \* R P T K V P K  
I K N K K \* K I Q L S N D V L L K S Q N  
\* K I K N K K F N \* A M T S Y \* S P K I

FIG. 16H

FIG. 16

3301/1101  
 TTT GAG CCG GAA AAA AAT GGT AAA GCA AAC TAT TGC CAT CTT TAT ATT TTG TAT TCT GTT  
 F E P E K N G K A N Y C H L Y I L Y S V  
 L S R K K M V K Q T I A I F I C I L F  
 \* A G K K W \* S K L L P S L Y F V F C F  
 3361/1121  
 TCC GAA CAC GTA TCC AAA ATC CTC CCA CTG CCT TTG CAG GGT TAG CAT TGC TCC CTA CCA  
 S E H V S K I L P L P L Q G \* H C S L P  
 P N T Y P K K S S H C L C R V S I A P Y Q  
 R T R I Q N P P T A F A G L A L L P T K  
 3421/1141  
 AAA TGA TCT AAT TTT TTG AAT CGT TTT TTG TC  
 K \* S N F F L N R F L  
 N D L I F F \* I V F C  
 M I \* F F F E S F F V

FIG. 16

1/1  
GTG TCT TCC ATG GAG TGA ATT GTG ATT TGT GAA TTA TAT CTG TCC AAT ACC GTT GCC TTG  
V S S M E \* I V I C E L Y L S N T V A L  
C L P W S E L \* F V N Y I C P I P L P C  
V F H G V N C D L \* I I S V Q Y R C L V  
61/21  
61/21  
TTG GGA GCT CAG ATA GAA AAG ACA TCT TAA TTC CAG ACA GTC TAT TCT CTG TCT ATT TCT  
L G A Q I E K T S \* F Q T V Y S L S I S  
W E L R \* K R H L N S R Q S I L C L F L  
G S S D R K D I L I P D S L F S V Y F S  
121/41  
121/41  
CTT TGT GAC TGC AAA TTT TAA TTT GTG ACG CCT TTT CTT ATT ACT CAT GTA TTT GTC ACT  
L C D C K F \* F V T P F L I T H V F V T  
F V T A N F N L \* R L F L L L M Y L S L  
L \* L Q I L I C D A F S Y Y S C I C H S  
181/61  
181/61  
CTT GAC GAT TGT TTT TCT ATA TTT TTT TTG TTC TGG GGT CCT CCA GAG AAT AAA AAA  
L D D C F F S I F F L F L F W G P P E N K K  
L T I V F F L Y F F C S G V L Q R I K N  
\* R L F F Y I F F V L G S S R E \* K I  
241/81  
241/81  
TAA TGA TCA ATA TAG ATG ATA GTA TAG TTA TAT TCT TAT TCG TTG CAC CTT GTT TAA CAA  
\* S I \* I V \* L Y S Y S L H L V \* Q  
N D Q Y S R \* Y S Y I L I R C T L F N K  
M I N I V D S I V I F L F V A P C L T N  
301/101  
301/101  
ATC ACT CAG ACT CAA AGA GAA TAT CGG TTG GTT ATC TCT CTC CGA AGG TGA ACA GCA AAC  
I T Q T Q R E Y R L V I S L R R \* T A N  
S L R L K E N I G W L S L S E G E Q Q T  
H S D S K R I S V G Y L S P K V N S K Q  
361/121  
361/121  
AGT ACC TCA CGT CTT TTT TTT TTT TAG TTT TTT TTT TTG TTT AAA CAG AAA AAC AAC TTT  
S T S R L F F E \* F F F L L K Q K K N F  
V P H V F F L N S F F F C \* N R K K T F  
Y L T S F F \* I V F F V E T E K K L S

FIG. 17A



421/141  
CTT CCG TAT ATT ACA TTG TAC ATT ATT TTT ATT GTA TTT TAG TTT CCA ACG TTA GGA TTT  
L P Y I T L Y I I F I V F \* F P T L G F  
F R I L H C T L F L Y F S F Q R \* D L  
S V Y Y I V H Y F Y C I L V S N V R I \*

451/151  
481/161  
GAG CCG TCA TTA ATA TTA TTC GTT TTT GTA CAC TAT TCC AGA CGA TTT ATT TTT AGT ACA  
E P S L I L Y Y S F L Y T I P D D L F L V H  
S R H \* Y Y I I R F C T L F Q T I Y F \* Y T  
A V I N I I R F C T L F Q T I Y F \* Y T  
541/181  
CTT AAA ATT CCT GTT GAT ATT GTC CAC TAG TTC TCT TTT CAT ATT TTA TTT TCG CTT ATT  
L K I P V D I V H \* F S F H I L F S L I  
L K F L I L S T S S L F I F Y F R L F  
\* N S C \* Y C P L V L F S Y F I F A Y S  
601/201  
CTT TAG GTT CTT TTA AGA GTC TCT GTT CAT TTT CCG TTC TTA CTG TTT CTT TGT CCT CGA  
L \* V L L R V S V H F P F L L F L C P R  
F R F F \* E S L F I F R S Y C F F V L D  
L G S F K S L C S F S V L T V S L S S I  
661/221  
TAT CTT TTA AGA AAG AGA GAA CTA AGC GCT GTA ACA TTT TTA AGT GGA CCT ACG TTA TGT  
Y L L R K R E L S A V T F L S G P T L C  
I F \* E R E N \* A L \* H F \* V D L R Y V  
S F K K E R T K R C N I F K W T Y V M S  
721/241  
CTA CAA AAG GTT TGA AAG AAG AAA TCG ATG ATG TAC CAT CAG TAG ACC CTG TCG TTT CAG  
L Q K V \* K K K S M Y H Q \* T L S F Q  
Y K R F E R R N R \* C T I S R P C R F R  
T K G L K E E I D D V P S V D P V S E

FIG. 17B

781/261  
AAA CAG TCA ATT CTG CTT TAG AGC AGT TGC AAC TAG ATG ATC CAG AGG AAA ACG CCA CCT  
K Q S I L L \* S S C N \* M I Q R K T P P  
N S Q F C F R A V A T R \* S R G K R H L  
T V N S A L E Q L Q L D D P E N A T S  
841/281  
CTA ATG CAT TTG CGA ATA AAG TTT CTC AAG ATT CTC AAT TCG CTA ATG GCC CTC CGT CGC  
L M H L R I K F L K I L N S L M A L R R  
\* C I C E \* S F S R F S I R \* W P S V A  
N A F A N K V S Q D S Q F A N G P P S Q  
901/301  
AAA TGT TTC CAC ATC CAC AAA TGA TGG GTG GAA TGG GCT TCA TGC CCT ACT CTC AAA TGA  
K C F H I H K \* W V E W A S C P T L K \*  
N V S T S T N D G W N G L H A L L S N D  
M F P H P Q M M G G F M P Y S Q M M  
961/321  
TGC AGG TTC CTC ATA ATC CTT GTC CAT TTT TTC CGC CCC CTG ATT TTA ATG ATC CAA CAG  
C R F L I I L V H F F R P L I L M I Q Q  
A G S S \* S L S I F S A P \* F \* S N S  
Q V P H N P C P F F P P D F N D P T A  
1021/341  
CAC CAT TGA GTA GCT CGC CCT TGA ATG CAG GCG GTC CAC CAA TGT TAT TCA AGA ATG ACT  
H H \* V A R P \* M Q A V H Q C Y S R M T  
T I E \* L A L E C R R S T N V I Q E \* L  
P L S S P L N A G G P P M L F K N D S  
1081/361  
CAC TTC CAT TTC AAA TGC TGT CTT CGG GTG CTG CGG TAG CAA CTC AAG GTG GAC AAA ATC  
H F H F K C C L R V L R \* Q L K V D K I  
T S I S N A V F G C C G S N S R W T K S  
L P F Q M L S S G A A V A T Q G G Q N L  
1141/381  
TAA ACC CAT TGA TAA ATG ACA ATT CAA TGA AGG TAT TGC CAA TCG CAT CGG CTG ATC CGT  
\* T H \* M T I Q \* R Y C Q S H R L I R  
K P I D K \* Q F N E G I A N R I G \* S V  
N P L I N D N S M K V L P I A S A D P L

FIG. 17C

1201/401  
TAT GGA CTC ATT CAA ACG TAC CAG GAT CAG CAT CTG TAG CCA TTG AAG AAA CCA CCG CTA  
Y G L I Q T Y Q D Q H L \* P L K K P P L  
M D S F K R T R I S I C S H \* R N H R Y  
W T H S N V P G S A S V A I E E T T A T  
1261/421  
CTC TAC AAG AAA GCC TAC CAT CTA AGG GCA GGG AGT CTA ATA ATA AGG CTA GTT CGT TCA  
L Y K K A Y H L R A G S L I I R L V R S  
S T R K K P T I \* G Q G V \* \* G \* F V Q  
L Q E S L P S K G R E S N N K A S S F R  
1321/441  
GAA GAC AAA CTT TTC ATG CTT TAT CAC CAA CTG ACC TTA TCA ATG CGG CCA ACA ATG TAA  
E D K L F H L Y H Q L T L S M R P T M \*  
K T N F S C F I T N \* P Y Q C G Q Q C N  
R Q T F H A L S P T D L I N A A N N V T  
1381/461  
CCT TGT CAA AGG ACT TCC AAT CTG ACA TGC AGA ATT TTT CTA AGG CTA AGA AAC CGT CTG  
P C Q R T S N L T C R I F L R L R N R L  
L V K G L P I \* H A E F F \* G \* E T V C  
L S K K D F Q S D M Q N F S K A K K P S V  
1441/481  
TAG GAG CTA ACA ATA CTG CAA AAA CCA GAA CTC AAT CCA TAT CTT TTG ATA ATA CTC CCT  
\* E L T I L Q K P E L N P Y L L I I L P  
R S \* Q Y C K N Q N S I H I F \* \* Y S L  
G A N N T A K T R T Q S I S F D N T P S  
1501/501  
CCT CAA CGT CAT TTA TAC CCC CAA CCA ATA GTG TTT CTG AGA AAT TAT CCG ATT TCA AAA  
P Q R H L Y P Q P I V F L R N Y P I S K  
L N V I Y T P N Q \* C F \* E I I R F Q N  
S T S F I P P T N S V S E K L S D F K I  
1561/521  
TAG AAA CCT CGA AGG AGG ATT TGA TTA ATA AAA CTG CAC CAG CTA AAA AAG AGA GTC CTA  
\* K P R R I \* L I K L H Q L K K R V L  
R N L E G G F D \* \* N C T S \* K R E S Y  
E T S K E D L I N K T A P A K K E S P T

FIG. 17D

1621/541  
 CAA CTT ATG GTG CAG CAT ATC CAT ATG GGG GAC CTT TAC TTC AAC CAA ATC CTA TTA TGC  
 Q L M V Q H I H M G D L Y F N Q I L L C  
 N L W C S I S I W G T F T S T K S Y Y A  
 T Y G A A Y P Y G G P L Q P N P I M P  
 1681/561  
 CAG GCC ACC CAC ATA ATA TAT CCT CCC CTA TCT ATG GTA TTA GAT CAC CTT TTC CTA ATT  
 Q A T H I I Y P P L S M V L D H L F L I  
 R P P T \* Y I I L P Y L W Y \* I T F S \* F  
 G H P H N I S S P I Y G I R S P F P N S  
 1741/581  
 CTT ATG AAA TGG GCG AAT TTC AAC CTT TCT CTC CGA TTT TAA ATC CTA CGA GTC ATT  
 L M K W A R N F H L S L R F \* I L R V I  
 L \* N G R A I S T F L S D F K S Y E S F  
 Y E M G A Q F Q P F S P I L N P T S H S  
 1801/601  
 CAC TAA ATG CAA ATT CTC CAA TTC CTC TAA CCC AAT CGC CAA TTC ATC TTG CAC CAG TTT  
 H \* M Q I L Q F L \* P N R Q F I L H Q F  
 T K C K F S N S N P I A N S S C T S F  
 L N A N S P I P L T Q S P I H L A P V L  
 1861/621  
 TAA ACC CTA GTT CAA ATT CTG TTG CCT TTT CAG ATA TGA AGA ATG ATG GTG GTA AGC CCA  
 \* T L V Q I L L P F Q I \* R M M V V S P  
 K P \* F K F C C L F R Y E E \* W W \* A H  
 N P S S N S V A F S D M K N D G K P T  
 1921/641  
 CCA CCG ATA ACG ACA AGG CGG GTC CAA ATG TTA GGA TGG ATT TAA TAA ATC CTA ATC TTG  
 P P I T R R V Q M L G W I \* I L I L  
 H R \* R Q G G S K C \* D G F N K S \* S W  
 T D N D K A G P N V R M D L I N P N L G  
 1981/661  
 GGC CAT CAA TGC AAC CTT TCC ACA TAT TAC CTC CCC AGC AAA ACA CCC CCC CTC CCT  
 G H Q C N L S T Y Y L P S K T P P L L P  
 A I N A T F P H I T S P A K H P P S S L  
 P S M Q P F H I L P P Q Q N T P P P P W

FIG. 17E

2041/681  
GGC TTT ATA GCA CTC CAC CTC CCT TCA ACG CAA TGG TTC CGC CTC ATT TGT TGG CTC AAA  
G F I A L H L P S T Q W F R L I C W L K  
A L \* H S T S L Q R N G S A S F V G S K  
L Y S T P P P F N A M V P P H L L A Q N  
2101/701  
ATC ATA TGC CGT TAA TGA ATA GCG CCA ATA ATA AAC ATC ATG GTC GTA ATA ACA ATA GCA  
I I C R \* I A P I I N I M V I T I A  
S Y A V N E \* R Q \* \* T S W S \* \* Q \* H  
H M P L M N S A N K H H G R N N S M  
2161/721  
TGT CAA GTC ATA ATG ACA ATG ACA ACA TTTG GTA ATT CTA ATT ACA ACA ATA AAG ACA CAG  
C Q V I M T M T T L V I L I T I K T Q  
V K S \* \* Q \* Q H W \* F \* L Q Q \* R H R  
S S H N D N D N I G N S N Y N N K D T G  
2221/741  
GTC GTT CTA ACG TTG GTA AAA TGA AAA ATA ATA ATA ACA GTT ATC ATG GCT ACT ATA ATA  
V V L T L V K \* K I \* K T V I M A T I I  
S F \* R W \* N E K Y E K Q L S W L L \* \*  
R S N V G K M K N K N S Y H G Y Y N N  
2281/761  
ACA ATA ATA ATA ATA ATA ATA ACA ATA ATA ATA ACA GTA ATG CTA CCA ACA GCA  
T I I I I I I T I I I I T V M L P T A  
Q \* \* \* \* \* Q \* \* \* \* Q \* C Y Q Q Q  
N N N N N N N N N N N S N A T N S N  
2341/781  
ACA GCG CGG AAA AAC GTA AAA TTG AGG AGT CGT CGA GAT TTG CGG ACG CAG TTT TAG  
T A R K N N V K L R S R R D L R T Q F \*  
Q R G K T T \* N \* G V V E I C G R S F R  
S A E K Q R K I E E S S R F A D A V L D  
2401/801  
ACC AAT ATA TCG GAA GTA TTC ACT CAT TGT GTA AAG ACC AAC ATG GTT GTC GTT TTC TGC  
T N I S E V F T H C V K T N M V V F C  
P I Y R K Y S L I V \* R P T W L S F S A  
Q Y I G S I H S L C K D Q H G C R F L Q

FIG. 17F

2461/821 AAA AGC AGT TCG ATA TTC TCG GCA GTA AGG CGG CGG ACC GAA TTT TTG AAG AAA CTA AGG  
 K S S W I F S A V R R R R T E F L K K L R  
 K A V G Y S R Q \* G G G P N F \* R N \* G  
 K Q L D I L G S K A A D R I F E E T K D  
 2521/841  
 ATT ATA CGG TTG AAT TGA TGA CTG ATT CAT TCG GTA ATT ATT TGA TCC AGA AGC TAT TGG  
 I I R L N \* \* L I H S V I I \* S R S Y W  
 L Y G \* I D D \* F I R \* L F D P E A I G  
 Y T V E L M T D S F G N Y L I Q K L L E  
 2581/861  
 AAG AGG TTA CCA CAG AAC AAA GAA TCG TAC TCA CAA AAA TAT CTT CCC CTC ATT TTG TCG  
 K R L P Q N K E S Y S Q K Y L P L I L S  
 R G Y H R T K N R T H K N I F P S F C R  
 E V T T E Q R I V L T K I S S P H F V E  
 2641/881  
 AAA TTT CCT TAA ACC CTC ATG GTA CTA GGG CAT TAC AAA AAC TCA TTG AAT GCA TCA AAA  
 K F P \* T L M V L G H Y K N S L N A S K  
 N F L K P S W Y \* G I T K T H \* M H Q N  
 I S L N P H G T R A L Q K L I E C I K T  
 2701/901  
 CAG ATG AAG AAG CAC AGA TTG TTG TTG ATT CTT TAC GCC CTT ATA CTG TCC AGT TGA GTA  
 Q M K K H R L L L I L Y A L I L S S \* V  
 R \* R S T D C C \* F F T P L Y C P V E \*  
 D E E A Q I V V D S L R P Y T V Q L S K  
 2761/921  
 AGG ATT TAA ATG GTA ATC ATG TTA TTC AAA AAT GTT TGC AAA GGT TGA AGC CTG AAA ACT  
 R I \* M V I M L L F K N V C K G \* S L K T  
 G F K W \* S C Y S K M F A K V E A \* K L  
 D L N G N H V I Q K C L Q R L K P E N F  
 2821/941  
 TCC AGT TTA TCT TTG ACG CAA TCT CTG ATA GCT GTA TTG ATA TTG CTA CTC ATA GAC ACG  
 S S L S L T Q S L I A V L I L L I L I D T  
 P V Y L \* R N L \* \* L Y \* Y C Y S \* T R  
 Q F I F D A I S D S C I D I A T H R H G

FIG. 17G

2881/961  
 GGT GTT GCG TTT TGC AAC GTT GTC TAG ATC ATG GGA CTA CAG AAC AAT GTG ACA ATC TGT  
 G V A F C N V V \* I M G L Q N N V T I C  
 V L R F A T L S R S W D Y R T M \* Q S V  
 C C V L Q R C L D H G T T E Q C D N L C  
 2911/971  
 2941/981  
 GTG ATA AGT TGC TAG CCC TTG TTG ATA AAT TAA CTT TGG ATC CAT TTG GCA ACT ATG TGG  
 V I S C \* P L L I N \* L W I H L A T M W  
 \* \* V A S P C \* I N F G S I W Q L C G  
 D K L L A L V D K L T L D P F G N Y V V  
 3001/1001  
 TGC AAT ATA TAA TTA CCA AAG AGG CTG AGA ACA AAT ATG ATT ATA CGC ATA AAA TTG  
 C N I \* L P K R L R T N M I I R I K L  
 A I Y N Y Q R G \* E E Q I \* L Y A \* N C  
 Q Y I I T K E A E K N K Y D Y T H K I V  
 3061/1021  
 TCC ACC TGT TGA AAC CAA GAG CCA TCG AAC TTT CTA TCC ATA AAT TTG GAT CAA ATG TGA  
 S T C \* N Q E P S N F L S I N L D Q M \*  
 P P V E T K S H R T F Y P \* I W I K C D  
 H L L K P R A I E L S I H K F G S N V I  
 3121/1041  
 TTG AAA AAA TCT TGA AGA CAG CTA TTG TTT CGG AGC CAA TGA TTC TGG AAA TTT TAA ATA  
 L K K S \* R Q L L F R S Q \* F W K F \* I  
 \* K N L E D S Y C F G A N D S G N F K \*  
 E K I L K T A I V S E P M I L E I L N N  
 3181/1061  
 ATG GTG GCG AGA CGG GTA TTC AAT CAT TGT TGA ATG ATA GCT ACG GAA ATT ACG TTT TAC  
 M V A R R V F N H C \* M I A T E I T F Y  
 W W R D G Y S I I V E \* \* L R K L R F T  
 G G E T G I Q S L L N D S Y G N Y V L Q  
 3241/1081  
 AGA CAG CAT TAG ACA TTT CTC ATA AGC AAA ATG ACT ATC TCT ATA AAA GAC TAT CAG AGA  
 R Q H \* T F L I S K M T I S I K D' Y Q R  
 D S I R H F S \* A K \* L S L \* K T I R D  
 T A L D I S H K Q N D Y L Y K R L S E I

FIG. 17H

3301/1101  
TTG TGG CGC CTT TAC TGG TGG GCC CCA TAA GAA ATA CAC CTC ATG GTA AAA GAA TCA TCG  
L W R L Y W A P \* E I H L M V K E S S  
C G A F T G G P H K K Y T S W \* K N H R  
V A P L L V G P I R N T P H G K R I I G

3331/1111  
3361/1121  
GAA TGT TAC ATT TAG ATT CAT AGT TGA TAC ATA TAT CCT CAG TTT AGC TTT TTT TAC GTT  
E C Y I \* I H S \* Y I Y P Q F S F F Y V  
N V T F R F I V D T Y I L S L A F F T L  
M L H L D S \* L I H I S S V \* L F L R \*

3391/1131  
3421/1141  
AGC CTC ATA TAA TAT CTT TTG TAC AAT ACT AAA ATA CAT CAT TTT TTT TTT CGT TGA GGA  
S L I \* Y L L Y N T K I H F F F R \* G  
A S Y N I F C T I L K Y I I F F F V E D  
P H I I S F V Q Y \* N T S F F S L R I

3451/1151  
3481/1161  
TCA AAT GAA TAT CCA AAG CAA AAA TAG GAA TTT TCA CTT TAT GGT ATA CTG GTA AAT  
S N E Y P K Q K \* E F S L Y G I L V N  
Q M N I Q S K K N R N F H F M V Y W \* I  
K \* I S K A K K I G I F T L W Y T G K \*

3511/1171  
3541/1181  
AGT GTT GAA GAA ATA AGA GAA GAA GAT CGC CCT AGA AAA CAG AAT GTT CTT ATT TAA ATA  
S V E I R E G D R P R K Q N V L I \* I  
V L K K \* E K E I A L E N R M F L F K \*  
C \* R N K R R S P \* K T E C S Y L N K

3571/1191  
3601/1201  
AGT AAA CTC AAA AGA AAA AAA GGA AGG AAG TTT TTG AGA ACT TTT ATC TAT ACA AAC  
S K L K R K K K G R K F L R T F I Y T N  
V N S K E K K K E G S F \* E L L S I Q T  
\* T Q K K K R K E V F E N F Y L Y K R

3631/1211  
3661/1221  
GTA TAC GTT TAA CTA TCT GGA TAA ACG TCG CAC AGG ATA CTG TAG AGG TCC TCA AGA  
V Y V \* L S G \* T S L H R I L \* R S S R  
Y T F N Y L D K R R S T G Y C R G P Q D  
I R L T I W I N V A P Q D T V E V L K I

FIG. 171



3721/1241  
TCA CCG TTA TTA ACA AAT TCA TCT AGT GTC CCC AAA TTA AAA CTA GTT GCA GAA AAA TTG  
S P L L T N S S V P K L K L V A E K L  
H R Y \* Q I H L V S P N \* N \* L Q K N C  
T V I N K F I \* C P Q I K T S C R K I V

3751/1251  
3781/1261  
TTA CTG TTG TTG TTA ATA TTG TTA ATA TTG TTG TTG TTG TTG TTG ATT TCA  
L L L L L L I L I L I L F L L L L L L I S  
Y C C C C \* Y C \* Y C F Y C C C C \* F H  
T V V V V N I V N I V F I V V V D F I

3811/1271  
3841/1281  
TTT GTG TTC ATA AAT CGT ACT TGT ACT GAA GTG GGT ATT TGC TGC TGA GCA TTG ATT GGT  
F V F I N G T C T E V G I C C \* A L I G  
L C S \* M V L V L K W V F A A E H \* L V  
C V H K W Y L Y \* S G Y L L L S I D W F

3871/1291  
3901/1301  
TTA TTA GAT TGG ACT TGC GAA TTA TTT TGC CCA TTT GTT GGT TGC GCG TAA TCG GGA TTG  
L L D W T C E L F C P F V G C A H L L V A R N R D \*  
Y \* I G L A N Y F A L L L V A R N R D \*  
I R L D L R I I L P I C W L R V I G I D

3931/1311  
3961/1321  
ATC ATA TCA GAC ACG GAT AAT GAC CTA AAT GAA GGC AAT T  
I I S D T D N D L N E G N  
S Y Q T R I M T \* M K A I  
H I R H G \* P K \* R Q

3991/1331

FIG. 17J

1/1  
 gaa gat cgg ggg gct gaa atc cat ctt cat acc gct ccg ccc gtg ttg gtg gaa tga  
 E D R G A E I H L H P T A P P V L V E \*  
 K I G G L K S I F I L P L R P C W W N E S  
 R S G G \* N P S S Y R S A R V G G M S  
 31/11  
 61/21  
 gcg ttg cat gtg tct tga aga gaa aag cag tgc ttt ggc agg act ctt tca gcc ccc acc  
 A L H V S \* R E K Q C F G R T L S A P T  
 R C M C L E E K S S A L A G L F Q P P P  
 V A C V L K R K A V L W Q D S F S P H L  
 151/51  
 121/41  
 tga aac atc acc ctc aag aac cag cta atc aca tgc ctg ttg ttt tga cat ctg gaa  
 \* N I T L K N Q L I P T C L L F \* H L E  
 E T S P S R T S \* S Q H A C C F D I W N  
 K H H P Q E P A N P N M P V L T S G T  
 211/71  
 181/61  
 cag ggt cgc aag cgc agc cac aac cag ctg caa atc agg ctc ttg cag ctg gga ctc act  
 Q G R K R S H N Q L Q I R L L Q L G L T  
 R V A S A A T T S C K S G S C S W D S L  
 G S Q A Q P Q P A A N Q A L A A G T H S  
 271/91  
 241/81  
 cca gcc ctg tcc cag gat cta tag gag ttg cag gcc gtt ccc agg acg acg cta tgg tgg  
 P A L S Q D L \* E L Q A V P R T T L W W  
 Q P C P R I Y R S C R P F P G R R Y G G  
 S P V P G S I G V A G R S Q D D A M V D  
 331/111  
 301/101  
 act act tct ttc aga ggc agc atg gtg agc agc ttg ggg gag gag gaa gtg gag gag gcg  
 T T S F R G S M V S S L G E E V E E A  
 L L L S E A A W \* A A W G R R K W R R G  
 Y F F Q R Q H G E Q L G G G S G G G  
 391/131  
 361/121  
 gct ata ata gca aac atc gat ggc cta ctg ggg ata aca ttc atg cag aac atc agg  
 A I I I A N I D G L L G I T F M Q N I R  
 L \* \* Q T S M A Y W G \* H S C R T S G  
 Y N N S K H R W P T G D N I H A E H Q V

FIG. 18A

421/141 451/151  
tgc gtt cca tgg atg aac tga atc atg att ttc aag cac ttg ctg tgg agg gaa gag cga  
C V P W M N \* I M I F K H L L W R E R  
A F H G \* T E S \* F S S T C S G G K S D  
R S M D E L N H D F Q A L A L E G R A M  
481/161 511/171  
tgg gag agc agc tct tgc cag gta aaa agt ttt ggg aaa cag atg aat cca gca aag atg  
W E S S S C Q V K S F G K Q M N P A K M  
G R A A L A R \* K V L G N R \* I Q Q R W  
G E Q L L P G K K F W E T D E S S K D G  
541/181 571/191  
gac caa aag gaa tat tcc tgg gtg atc aat ggc gag aca gtg cct ggg gaa cat cag atc  
D Q K E Y S W V I N G E T V P G E H Q I  
T K R N I P G \* S M A R Q C L G N I R S  
P K G I F L G D Q W R D S A W G T S D H  
601/201 631/211  
att cag ttt ccc agc caa tca tgg tgc aga gaa gac ctg gtc aga gtt tcc atg tga aca  
I Q F P S Q S W C R E D L V R V S M \* T  
F S F P A N H G A E K T W S E F P C E Q  
S V S Q P I M V Q R R P G Q S F H V N S  
661/221 691/231  
gtg agg tca att ctg tac tgt ccc cac gat cgg aga gtg ggg gac tag gcg tta gca tgg  
V R S I L Y C P H D R R V G D \* A L A W  
\* G Q F C T V P T I G E W G T R R \* H G  
E V N S V L S P R S E S G G L G V S M V  
721/241 751/251  
tgg agt atg tgt tga gct cat ccc cgg gcg att cct gtc taa gaa aag gag gat ttg gcc  
W S M C \* A H P R A I P V \* E K E D L A  
G V C V E L I P G R F L S K K R R I W P  
E Y V V L S S S P G D S C L R K G G F G P

FIG. 18B

781/261  
 caa ggg atg cag aca gtg atg aaa acg aca aag gtg aaa aga aga aca agg gta cgt ttg  
 Q G M Q T V M K T T K V K R R T R V R L  
 K G C R Q \* \* K R Q R \* K E E Q G Y V \*  
 R D A D S D E N D K G E K K N K G T F D  
 811/271  
 841/281  
 atg gag ata agc tag gag att tga agg agg gtg atg tga tgg aca aga cca atg gtt  
 M E I S \* E I \* R R R V M \* W T R P M V  
 W R \* A R R F E G G \* C D G Q D Q W F  
 G D K L G D L K E E G D V M D K T N G L  
 901/301  
 931/311  
 tac cag tgc aga atg gga ttg atg cag acg tca aag att tta gcc gta ccc ctg gta att  
 Y Q C R M G L M Q T S K I L A V P L V I  
 T S A E W D \* C R R Q R F \* P Y P W \* L  
 P V Q N G I D A D V K D F S R T P G N C  
 961/321  
 991/331  
 gcc aga act ctg cta atg aag tgg atc ttc tgg gtc caa acc aga atg gtt ctg agg gct  
 A R T L L M K W I F W V Q T R M V L R A  
 P E L C \* \* S G S S G S K P E W F \* G L  
 Q N S A N E V D L L G P N Q N G S E G L  
 1021/341  
 1051/351  
 tag ccc agc tga cca gca cca atg gtg cca agc ctg tgg agg att tot cca aca tgg agt  
 \* P S \* P A P M V P S L W R I S P T W S  
 S P A D Q H Q W C Q A C G G F L Q H G V  
 A Q L T S T N G A K P V E D F S N M E S  
 1081/361  
 1111/371  
 ccc aga gtg tac cct tgg acc cca tgg acc atg tgg gca tgg agc cta ttc agt ttg att  
 P R V S P W T P W N M W A W S L F S L I  
 P E C P L G P H G T C G H G A S S V \* L  
 Q S V P L D P M E H V G M E P L Q F D Y  
 1141/381  
 1171/391  
 att cag gca cgc agg tac ctg tgg act cag cag cag caa ctg tgg gac ttt ttg act aca  
 I Q A R R Y L W T Q Q Q L W D F L T T  
 F R H A G T C G L S S S N C G T F \* L Q  
 S G T Q V P V D S A A A T V G L F D Y N

FIG. 18C

1201/401  
att ctc aac aag agc tgt tcc aaa gac cta atg cgc ttg ctg tcc agc agt tga cag ctg  
I L N N S C S K D L M R L L S S S \* Q L  
F S T T A V P K T \* C A C C P A V D S C  
S Q Q Q L F Q R P N A L A V Q Q L T A A  
1231/411  
1261/421  
ctc agc agc agc agt atg cac tgg cag ctg ctc atc agc cgc aca tgc gtt tag ctg ccg  
L S S S S M H W Q L L I S R T S V \* L P  
S A A A V C T G S C S S A A H R F S S R  
Q Q Q Q Y A L A A H Q P H I G L A P A  
1291/431  
1321/441  
ctg cgt ttg tcc cca atc cat aca tca tca ggc ctg ctc ccc cag gga cgg acc cct aca  
L R L S P I H T S S A L L P Q G R T P T  
C V C P Q S I H H Q R C S P R D G P L H  
A F V P N P Y I I S A A P P G T D P Y T  
1411/471  
1381/461  
cag ctg gat tgg ctg cag cag cga cac tag gcc cag ctg tgg tcc ctc acc agt att atg  
Q L D W L Q Q R H \* A Q L W S L T S I M  
S W I G C S S D T R P S C G P S P V L W  
A G L A A A T L G P A V V P H Q Y Y G  
1471/491  
1441/481  
gag tta ctc cct ggg gag tct acc ctg cca gtc ttt tcc agc agc aag ctg ccg ctg ccg  
E L L P G E S T L P V F S S S K L P L P  
S Y S L G S L P C Q S F P A A S C R C R  
V T P W G V Y P A S L F Q Q A A A A  
1531/511  
1501/501  
ctg cag caa cta att cag cta atc aac aga cca ccc cag agc ctc agc aag gac agc agc  
L Q Q L I Q L I N R P P H R L S K D S S  
C S N \* F S S T D H P T G S A R T A A  
A A T N S A N Q Q T T P Q A Q Q Q Q Q  
1591/531  
1561/521  
agg ttc tcc gtc gag cca gcc aac gtc ctt tga ccc caa acc aga acc agc agc gac  
R F S V E E P A N V L \* P Q T R T S R D  
G S P W R S Q P T S F D P K P E P A G T  
V L R G G A S Q R P L T P N Q N Q Q G Q

FIG. 18D

1621/541  
agc aaa cgg atc ccc ttg tgg cag ctg cag cag tga att ctg ccc ttg cat ttg gac aag  
S K R I P L W Q L Q Q \* I L P L H L D K  
A N G S P C G S C S S E F C P C I W T R  
Q T D P L V A A A V N S A L A F G Q G  
1681/561  
gtc tgg cag gca tgc cag gtt atc cgg tgt tgg ctg ctg ctt act atg acc aaa  
V W Q Q A C Q V I R C W L L L L T M T K  
S G S R H A R L S G V G S C C L L \* P N  
L A A G M P G Y P V L A P A A Y Y D Q T  
1741/581  
ctg gtc ccc ttg tag tga atg cag gcg cga gaa atg gtc ttg gag ctg ctg ttg gac ttg  
L V P L \* M Q A R E M V L E L L F D L  
W C P C S E C R R E K W S W S S C S T C  
G A L V V N A G A R N G L G A P V R L V  
1801/601  
tag ctg ccc cag tca tca tta gtt cct cag ctg cag aag cag ctg ttg cag cag cag  
\* L L P Q S S L V P Q L H K Q L L Q Q P  
S S C P S H H \* F L S C T S S C C S S R  
A P A P V I I S S A A Q A A V A A A  
1861/621  
cag att cag caa atg gag cag ctg gtc gtc ttg ctg gaa caa atg gac cat ttc gcc  
Q L Q Q M E Q L V V L L E Q Q M D H F A  
S F S K W S S W W S C W N N K W T I S P  
A S A N G A A G G L A G T T N G P F R P  
1921/641  
ctt tag gaa cac agc agc agc ccc agc ccc agc agc cca ata aca acc tgg cat  
L \* E H S S L S P S P S S P I T T W H  
F R N T A A S A P A P A A A Q \* Q P G I  
L G T Q Q P Q P Q Q Q P N N L A S  
1981/661  
cca gtt ctt tct acg gca aca act ctg tga aca gca att cac aga gca gct ccc tct tct  
P V L S T A T L \* T A I H R A A P S S  
Q F F L R Q Q L S E Q Q F T E Q L P L L  
S S F Y G N N S L N S N S Q S S L F S

FIG. 18E

2041/681  
ccc agg gct ctg ccc agg ctg cca aca cat cct tgg gat tgg gaa gta gca gtt ctc tgc  
P R A L P S I, P T H P W D S E V A V L S  
P G L C P A C Q H I L G I R K \* Q F S R  
Q G S A Q P A N T S L G F G S S S L G  
2101/701  
gag cca ccc tgg gat ccc ccc tgg gag ggt ttg gaa cag cag ttg caa act cca aca ctg  
A P P W D P P I, E G L E Q Q L Q T P T L  
R H P G I R P W R V W N S S C K L Q H W  
A T L G S A L G G F G T A V A N S N T G  
2161/721  
gca gtg gct ccc gcc gtg act ccc tga ctg gca gca gtg acc ttt ata aga gga cat cga  
A V A P A V T P \* L A A A V T F I R G H R  
Q W L P P \* L P D W Q Q \* P L \* E D I E  
S G S R R D S L T G S S D L Y K R T S S  
2221/741  
gca gct tga ccc cca ttg gac aca gtt ttt ata acg gcc tta gct ttt cct ctc ctc  
A A \* P P L D T V F I T A L A F P P L L  
Q L D P H W T Q F L \* R P \* L F L L S W  
S L T P I G H S F Y N G L S F S S P G  
2281/761  
gac ccg tgg gca tgc ctc tcc cta gtc agg gac cag gac att cag aga cag ctc ctt  
D P W A C L S I, V R D Q D I H R H L L  
T R G H A S P \* S G T R T F T D T S F  
P V G M P L P S Q G P G H S Q T P P P S  
2341/781  
ccc tct ctt cac atg gat cct ctt caa gct taa acc tgg gag gac tca cga atg gca gtg  
P S L H M D P L Q A \* T W E D S R M A V  
P L F T W I L F K L K P G R T H E W Q W  
L S S H G S S S L N L G G L T N G S G  
2401/801  
gaa gat aca tct ctg ctc cag gcg ctg aag cca agt acc gca gtg caa gca gcg cct  
E D T S L L L Q A L K P S T A V Q A A P  
K I H L C C S R R \* S Q V P Q C K Q R L  
R Y I S A A P G A E A K Y R S A S A S

FIG. 18F

2461/821 2491/831  
cca gcc tot tca gcc cga gca ctc ttt tot ctt ctc gtt tgc gat atg gaa tgt  
p a s a r a a l f s l p l v c d m e c  
q p l q p e q h s f l f l s f a i w n v  
s l f s p s s t l f s s s r l r y g m s  
2521/841 2551/851  
ctg atg tca tgc ctt ctg gca gga ggc ttt tgg aag att ttc gaa aca acc ggt acc  
l m s c l l a g a g f w k i f e t t g t  
\* c h a f w q e q a f g r f s k q p v p  
d v m p s g r s r l l e d f r n n r y p  
2581/861 2611/871  
cca att tac aac tgc ggg aga ttg ctg gac ata taa tgg aat ttt ccc aag acc agc atg  
p i y n c g r l l d i \* w n f p k t s m  
q f t t a g d c w t y n g i f p r p a w  
n l q l r e i a g h i m e f s q d q h g  
2641/881 2671/891  
ggt cca gat tca ttc agc tga aac tgg agc gtg cca cac cag ctg agc gcc agc ttg tct  
g p d s f s \* n w s v p h q l s a s l s  
v q i h s a e t g a c h t s \* a p a c l  
s r f i q l k l e r a t p a e r q l v f  
2701/901 2731/911  
tca atg aaa tcc agg ctg cct acc aac tca tgg tgg atg tgt ttg gta att acg tca  
s m k s s r l p t n s w w m c l v i t s  
q \* n p p g c l p t h g g c v w \* l r h  
n e i l q a a y q l m v d v f g n y v i  
2761/921 2791/931  
ttc aga agt tct ttg aat ttg gca gtc ttg aac aga agc tgg ctt tgg cag aac gga ttg  
f r s s l n l a v l n r s w l w q n g f  
s e v l \* i w q s \* t e a g f g r t d s  
q k f f e f g s l e q k l a l a e r i r  
2821/941 2851/951  
gag gcc acg tcc tgt cat tgg cac tac aga tgt atg gct gcc gtg tta tcc aga aag ctg  
e a t s c h w h y r c m a a v l s r k l  
r p r p v i g t t d v w l p c y p e s s  
g h v l s l a l q m y g c r v i q k a l

FIG. 18G



2881/961  
 ttg agt tta ttc ctt cag acc agc aga atg aga tgg ttc ggg aac tag atg gcc atg tot  
 L S L F L Q T S R M R W F G N \* M A M S  
 \* V Y S F R P A E \* D G S G T R W P C L  
 E F I P S D Q Q N E M V R E L D G H V L  
 2911/971  
 2941/981  
 tga agt gtg tga aag atc aga atg gca atc acg tgg ttc aga aat gca ttg aat gtg tac  
 \* S V \* K I R M A I T W F R N A L N V Y  
 E V C E R S E W Q S R G S E M H \* M C T  
 K C V K D Q N G N H V V Q K C I E C V Q  
 2971/991  
 3001/1001  
 agc ccc agt ctt tgc aat tta tca tog atg atg gac agg tat ttg cct tat cca  
 S P S L C N L S S M R L R D R Y L P Y P  
 A P V F A I Y H R C V \* G T G I C L I H  
 P Q S L Q F I I D A F K G Q V F A L S T  
 3031/1011  
 3061/1021  
 cac atc ctt atg gct gcc gag tga ttc aga gaa tcc tgg ago act gtc tcc ctg acc aga  
 H I L M A A E \* F R E S W S T V S L T R  
 T S L W L P S D S E N P G A L S P \* P D  
 H P Y G C R V I Q R I L E H C L P D Q T  
 3091/1031  
 3121/1041  
 cac tcc cta ttt tag agg agc ttc acc agc aca cag agc agc agc agc agc agc agc agc  
 H S L F \* R S F T S T Q S S L Y R I N M  
 T P Y F R G A S P A H R A A C T G S I W  
 L P I L E E L H Q H T E Q L V Q D Q Y G  
 3151/1051  
 3181/1061  
 gaa att atg taa tcc aac atg tac tgg ago acg gtc gtc ctg agg ata aaa gca aaa ttg  
 E I M \* S N M Y W S T V V L R I K A K L  
 K L C N P T C T G A R S S \* G \* K Q N C  
 N Y V I Q H V L E H G R P E D K S K I V  
 3211/1071  
 3241/1081  
 tag cag aaa tcc gag gca atg tac ttg tat tga gtc ago aca aat ttg' daa gca atg ttg  
 \* Q K S E A M Y L Y \* V S T N L Q A M L  
 S R N P R Q C T C I E S A Q I C K Q C C  
 A E I R G N V L V L S Q H K F A S N V V

FIG. 18H

3301/1101  
tgg aga agt gtg tta ctg acg cct cac gta cgg agc gcg ctg tgc tca tgg atg agg tgt  
W R S V L L T P H V R S A L C S S M R C  
G E V C Y S R L T Y G A R C A H R \* G V  
E K C V T H A S R T E R A V L I D E V C

3331/1111  
3361/1121  
gca cca tga acg acg gtc ccc aca gtg cct tat aca coa tga agg acc agt atg cca  
A P \* T T V P T V P P Y T P \* \* R T S M P  
H H E R R S P Q C L I H H D E G P V C Q  
T M N D G P H S A L Y T M M K D Q Y A N

3421/1141  
3451/1151  
act acg tgg tcc aga aga tga ttg acg tgg cgg agc cag gcc ago gga aga tgg tca tgc  
T T W S R R \* L T W R S Q A S G R S S C  
L R G P E D D \* R G G A R P A E D R H A  
Y V V Q K M I D V A E P G Q R K I V M H

3481/1161  
3511/1171  
ata aga tcc gcc ccc aca tgg caa ctg ttc gta agt aca cct atg gca ago aca ttc tgg  
I R S G P T S Q L F V S T P M A S T F W  
\* D P A P H R N S S \* V H L W Q A H S G  
K I R P H I A T L R K Y T Y G K H I L A

3541/1181  
3571/1191  
cca agc tgg aga agt act aca tga aga acg gtg ttg act tag gcc cca tct gtg gcc ccc  
P S W R S T T \* R T V L T \* G P S V A P  
Q A G E V L H E R C \* L R A H L W P P  
K L E K Y Y M K N G V D L G P I C G P P

3601/1201  
3631/1211  
cta atg gta tca tct gag gca gtg tca ccc gct gtt ccc tca ttc ccg ctg acc tca ctg  
L M V S S E A V S P A V P S F P L T S L  
\* W Y H L R Q C H P L F P H S R \* P H W  
N G I I \* G S V T R C S L I P A D L T G

3661/1221  
3691/1231  
gcc cac tgg caa atc caa cca gca acc aga aat gtt cta gtg tag agt ctg aga cgg gca  
A H W Q I Q P A T R N V L V \* S L R R A  
P T G K S N Q Q P E M F \* C R V \* D G Q  
P L A N P T S N Q K C S S V E S E T G K

FIG. 181

3721/1241  
 agt ggt tgc tcc agg att act ccc tcc tcc aaa gga atc aaa tcc acg agt gga aaa  
 S G C S R I T P S S K K G I K S T S G K  
 V V A P G L L P P P K K E S N P R V E K  
 W L L Q D Y S L L Q K R N Q I H E W K S  
 3751/1251  
 3781/1261  
 gcc ttt gta aat tta att tta tta cac ata aca tgt act att ttt ttt aat tga cta att  
 A F V N L I L L L I T C T I F F L I D \* L I  
 P L \* I \* F Y Y T \* H V L L F F L I D \* L  
 L C K F N F I T H N M Y Y F F \* L T N C  
 3811/1271  
 3841/1281  
 gcc ctg ctg ttt tac tgg tgt ata gga tac ttg tac ata ggt aac caa tgt aca tgg gag  
 A L L F Y W C I G Y L Y I G N Q C T W E  
 P C C F T G V \* D T C T \* V T N V H G R  
 P A V L L V Y R I L V H R \* P M Y M G G  
 3901/1301  
 gcc aca tat ttt gtt cac tgt tgt atc tat att tca cat gtg gaa act ttc agg gtg gtt  
 A T Y F V H C C I Y I S H V E T F R V V  
 P H I L F T V V S I F H M W K L S G W L  
 H I F C S L L Y L Y F T C G N F Q G G W  
 3931/1311  
 3961/1321  
 ggt tta aca aaa aaa agc ttt aaa aaa aga aaa gga aaa ggt ttt tag ctg  
 G L T K K K S F K K K R K K G K G F \* L  
 V \* Q K K K A L K K K E K K E K V F S S  
 F N K K K K L \* K K K R K R F L A H  
 3991/1331  
 4021/1341  
 att tgc ctg gcc ggc aag ttt tgc aaa tag ctg ttc ccc aac tcc tca ttt tag taa aaa  
 I C L A G K F C K \* L F P T S S F \* K  
 F A W P A S F A N S S S P P P H F S K K  
 L P G R Q V L Q I A L P H L L I L V K N  
 4051/1351  
 4081/1361  
 aca aac aaa aac aaa acc tga gaa gtt tga att gta gtt aaa tga, bcc caa act ggc  
 T N K N K K T \* E V \* I V V K \* P Q T G  
 Q T K T K K P E K F E L \* L N D P K L A  
 K Q K Q K N L R S L N C S \* M T P N W H

FIG. 18J

4141/1381  
att taa cac tgt tta taa aaa ata tat ata tat ata tat aat gaa aaa ggt ttc  
I \* H C L \* K I Y I Y I Y I Y I Y N E K G F  
F N T V Y K K Y I Y I Y I Y I M K K V S  
L T L F I K N I Y I Y I Y I \* K R F Q  
4201/1401  
aga gtt gct aaa gct tca gtt tgt gac att aag ttt attg aaa ttc taa aaa atg cct ttt  
R V A K A S V C D I K F M K F \* K M P F  
E L L K L Q F V T L S L \* N S K K C L F  
S C \* S F S L \* H \* V Y E I L K N A F F  
4261/1421  
ttg gag act ata tta tgc tga aga agg ctg ttc gtg agg aga tgc gag cac cca gaa  
L E T I L C \* R R L F V R R C E H P E  
W R L Y Y A E E G C S \* G G D A S T Q N  
G D Y I M L K K A V R E E M R A P R T  
4321/1441  
cgt ctt ttg agg ctg ggc ggg tgt gat tgt tta ctg cct act gga ttt ttt tct att aac  
R L L R L G G C D C L L P T G F S I N  
V F \* G W A G V I V Y C L L D F F L L T  
S F E A G R V \* L F T A Y W I F F Y \* H  
4381/1461  
att gaa agg taa aat ctg att att tag cat gag aaa aat cca act ctg ctt ttg gtc  
I E R \* N L I I \* H E K K N P T L L L V  
L K G K I \* L F S M R K K I Q L C F W S  
\* K V K S D Y L A \* E K K S N S A F G L  
4441/1481  
ttg ctt cta taa ata tat agt gta tac ttg gtg tag act ttg cat ata tac aaa ttt gta  
L L L \* I Y S V Y L V \* T L H I Y K F V  
C F Y K Y I V Y T W C R L C I Y T N L \*  
A S I N I \* C I L G V D F A Y I Q I C S  
4501/1501  
gta ttt tct tgt ttt gat gtc taa tct gta tct ata atg tac cct agt cga aca tac  
V F S C F D V \* S V S I M Y P S S R T Y  
Y F L V L M S N L Y L \* C F L V V E H T  
I F L F \* C L I C I Y N V P \* \* S N I L

FIG. 18K

4561/1521  
ttt tga ttg tac aat tgt aca ttt gta tac ctg taa tgt aaa tgt gga gaa gtt tga atc  
F \* L Y N C T' F V Y L \* C K C G E V \* I  
F D C T' I V H L Y T C N V N V E K F E S  
L I V Q L Y I C I P V M \* M W R S L N Q  
4621/1541  
aac ata aac acg ttt ttt ggt aag aaa aga tta gaa ggc cct gtg cat tca gtg tat  
N I N T' F F G K K R E L A S P V H S V Y  
T \* T R F F L V R K E N \* P A L C I Q C I  
H K H V F W \* E K R I S Q P C A F S V Y  
4681/1561  
att ctc acc ttt tat ggt cgt agc ata tag tgt tgt ata ttg taa att gta att tca acc  
I L T' F Y G R S I \* C C I L \* I V I S T'  
F S P F M V V A Y S V V Y C K L \* F Q P  
S H L L W S \* H I V L Y I V N C N F N Q  
4741/1581  
aga agt aaa ttt ttt tgt ttt gaa gga ata aat gtt ctt tat aca gcc tag tta atg ttt  
R S K F F C F E G I N V L Y T A \* L M F  
E V N F F V L K E \* M F F I Q P S \* C L  
K \* I F L F \* R N K C S L Y S L V N V \*  
4801/1601  
aaa aag aaa ata gct tgg ttt tat ttg tca tct agt ctc aag tat agc gag att ctt  
K K K I A W F Y L S S S L K Y S E I L  
K R K K \* L G F I C H L V S S I A R F F  
K E K N S L V L F V I \* S Q V \* R D S F  
4861/1621  
tct aaa tgt tat tca aga ttg agt tct cac tag tgt ttt ttt aat cct aaa aaa gta atg  
S K C Y S R L S S H \* C F F N P K K V M  
L N V I Q D \* V L T S V F L I L K K \* C  
\* M L F K I E F S L V F F \* S \* K S N V  
4921/1641  
ttt tga ttt tgt gac agt caa aag gac gtg caa aag tct agc ctt gcc cga gct ttc ctt  
F \* F C D S Q K K D V Q K S S L A R A F L  
F D F V T V K R T C K S L A L P E L S L  
L I L \* Q S K G R A K V \* P C P S F P Y

FIG. 18L

4981/1661 5011/1671  
aca atc aga gcc cct cta acc ttg taa agt gtg aat cgc cct tcc ctt ttg tac aga aga  
T I R A P L T L \* S V N R P S L L Y R R  
Q S E P L S P C K V \* I A L P F C T E D  
N Q S P S H L V K C E S P F P F V Q K M

5041/1681 5071/1691  
tga act gta ttt tgc att ttg tct act tgt aag tga atg taa cat act gtc aat ttt cct  
\* T V F C I L S T C K \* M \* H T V N F P  
E L Y F A F C L L V S E C N I L S I F L  
N C I L H F V Y L \* V N V T Y C Q F S L

5101/1701 5131/1711  
tgt ttg aat ata gaa ttg taa cac tac acg gtg tac att tcc aga gcc ttg tgt ata ttt  
C L N I E L \* H Y T V Y I S R A L C I F  
V \* I \* N C N T T R C T F P E P C V Y F  
F E Y R I V T L H G V H F Q S L V Y I S

5161/1721 5191/1731  
cca atg aac ttt ttt gca agc aca ctt gta acc ata tgt gta taa tta aca aac ctg tgt  
P M N F F A S T L V T I C V \* L T N L C  
Q \* T F L Q A H L \* P Y V Y N \* Q T C V  
N E L F C K H T C N H M C I I N K P V Y

5221/1741 5251/1751  
atg ctt atg cct ggg caa cta ttt ttt gta act ctt gtg tag att gtc tct aaa caa tgt  
M L M P G Q L F F L \* L L C R L S L N N V  
C L C L G N Y F L \* L L C R L S L N N V  
A Y A W A T I F C N S C V D C L \* T M C

5281/1761 5311/1771  
gtg atc ttt att ttg aaa aat aca gaa ctt tgg aat ctg  
V I F I L K N T E L W N L  
\* S L F \* K I Q N F G I  
D L Y F F E K Y R T L E S

FIG. 18M

1/1  
 CGA AGT TAA AGG GAA AAA GCA ATT CAC AGG AAA GAG TAC AAA GAC AGC ACA AGA AAA AAA  
 G S A R F K A I H R K E Y K D S T R K K  
 E V K G K K Q F T G K S T K T A Q E K N  
 K I K C K K S N S Q E R V Q R Q K K K T  
 61/21  
 CAG ATT TCA TAA AAA TAG TGA TTC TGG TTC TTC AAA GAC ATT TCC AAC AAG GAA AGT. TGC  
 Q I S \* K \* \* F W F F K D I S N K E S C  
 R F H K N S D S G S S K K T F P T R K V A  
 D F I K I V I L V L Q R H F Q Q K L L  
 121/41  
 TAA AGA AGG TGG ACC TAA AGT CAC ATC TAG GAA CTT TGA GAA AAG TAT CAC AAA ACT TGG  
 \* R R W T \* S H I \* E L \* E K Y H K T W  
 K F G G P K V T S R N F E K S I T K L G  
 K K V D L K S H L G T L R K K V S Q N L G  
 181/61  
 GAA AAA GGG TGT AAA GCA GTT CAA GAA TAA GCA GCA AGG GGA CAA ATC ACC AAA GAA CAA  
 E K G C K A V Q E \* A A R G Q I T K E Q  
 K K G V K Q F K N K Q Q G D K S P K N K  
 K R V \* S S R I S S K G T N H Q R T N  
 241/81  
 ATT CCA GCC AAA TAA ATT CAA CAA GAA GAG AAA ATT CCA GCC AGA TGG TAG AAG CGA  
 I P A G K \* I Q Q E E K F P A R W \* K R  
 F Q P A N K F N K K R K F Q P D G R S D  
 S S R Q I N S T R R E N S S Q M V E A M

FIG. 19A

301/101 TGA ATC AGC AGC CAA GAA GCC CAA ATG GGA TGA CTT CAA AAA GAA GAA GAA ACT GAA  
 \* I S S Q E A Q M' G \* L Q K E E E R T E  
 E S A A K K P K W D D F K K K E L K  
 H Q Q P R S P N G M T S K R R K N \* S  
 331/111  
 361/121 GCA AAG CAG ACA ACT CAG TGA TAA AAC CAA CTA TGA CAT TGT TGT TCG GGC AAA GCA GAT  
 A K Q T T Q \* \* N Q L \* L \* H C C S G K A D  
 Q S R Q L S D K T N Y D I V V R A K Q M C  
 K A D N S V I K P T M T L I F G Q S R C  
 391/131  
 421/141 GTG CGA GAT TTT AAG AAG AAA AGA CTG TGA CAA AGA AAA AAG AGT AAA GTT AAT GAG TGA  
 V G D F K K K R L \* Q R K K K R V K L M S D' I  
 W E I L R R K D C D T K E K K E \* S \* \* V I  
 G R F \* E E K T V T K K K E \* S \* \* V I  
 451/151  
 481/161 TTT GCA GAA GTT GAT TCA AGC GAA AAT TAA AAC TAT TGC ATT TGC ACA CGA TTC AAC TCG  
 F A E V D S R E N \* N Y C I C T R F N S  
 L Q K L I Q G K I K T I A F A H D S T R  
 C R S \* F K K L K L L L H L H T I Q L V  
 511/171

FIG. 19B



541/181 571/191  
 TGT GAT CCA GTG TTA CAT TCA GTA TGG TAA TGA ACA ACA GAG AAA ACA GGC TTT TGA AGA  
 C D P V L H S V W \* \* R T E K T G F \* R  
 V I Q C Y I Q Y G N E E Q R K Q A F E E  
 \* S S V T F S M V M K N R E N R L L K N  
 601/201 631/211  
 ATT GCG AGA TGA TTT GGT TGA GTT AAG TAA AGC CAA ATA TTC GAG AAA TAT TGT TAA GAA  
 I A R \* F G \* V K \* S Q I F E K Y C \* E  
 L R D D L V E L S \* V K A K A K Y S R N I L L R N  
 C E M I W L S \* V K P N I R E I L L R N  
 661/221 691/231  
 ATT TCT CAT GTA TGG AAG TAA ACC ACA GAT TGC AGA GAT AAT CAG AAG TTT TAA AGG CCA  
 I S H V W K \* T T D C R D N Q K F \* R P  
 P L M Y G S K P Q I A E I I R S F K G H  
 P S C M E V N H R L Q R \* S E V L K A T  
 721/241 751/251  
 CGT GAG GAA GAT GCT GCG GCA TGC TGC GGA AGC ATC AGC CAT CGT GGA GTA CGC ATA CAA TGA  
 R E F D A A A C G S I S H R G V R I Q \*  
 V R K M L R H A E A S A I V E Y A Y N D  
 \* G R C C G H R K H Q P S W S T H T H T

FIG. 19C

781/261 811/271  
 CAA AGC CAT TTT GGA GCA GAG GAA CAT GCT GAC GGA AGA GCT CTA TGG GAA CAC ATT TCA  
 Q S H F G A E E H A D G R A L W E H I S  
 K A I L E Q R N M L T E L Y G H T F Q  
 K P Y W S R G T C \* R K S S H G T H F S  
 841/281 871/291  
 GCT TTA CAA CTC AGC AGA TCA CCG AAC TCT GGA CAA AGT GTT AGA GGT ACA GCC AGA AAA  
 A L Q V S R S A D H R T L D K V L E V Q P E K  
 L Y K S A Q Q I T E L W T K C \* R Y S Q K N  
 P T S Q Q I T E L W T K C \* R Y S Q K N  
 901/301 931/311  
 ATT AGA ACT TAT TAT GGA TGA AAT GAA ACA GAT TCT AAC TCC AAT GGC CCA AAA GGA AGC  
 I R T Y Y G \* N E T Q I L T P M A Q K E A  
 L E L I M D E M K \* N R F \* L Q W P K R K L  
 \* N L L W M K \* N R F \* L Q W P K R K L  
 961/321 991/331  
 TGT GAT TAA GCA CTC ATT GGT GCA TAA AGT ATT CTT GGA CTT TTT TAC CTA TGC ACC CCC  
 C D \* A L I G A \* S I L G L F Y L C T P  
 V I K H S L V C I K Y S W T F L P M H P P  
 \* L S T H W C I K Y S W T F L P M H P P  
 1021/341 1051/351  
 CAA ACT CAG ATC AGA AAT GAT TGA AGC CAT CCG CGA AGC GGT GGT CTA CCT GGC ACA CAC  
 Q T Q I R N D \* S H P R S G G L P G T H  
 K L R S E M I E A I R E A V V Y L A H T  
 H S D Q K \* L K P S A K R W S T W H T H

FIG. 19D

1081/361 1111/371  
 ACA CGA TGG CGC CAG AGT GGC CAT GCA CTG CCT GTG GCA TGG CAC GCC CAA GGA CAG GAA  
 T R W R Q S G H A L P V A W H A Q G Q E  
 H D G A R V A M H C L W H G T P K D R K  
 T H A P E W P C T A C G M A R P R T G K

1141/381 1171/391  
 AGT GAT TGT GAA AAC AAT GAA GAC TTA TGT TGA AAA GGT GGC TAA TGG CCA ATA CTC CCA  
 S D C E N N E D L C \* K G \* W P I L P  
 V I V K T M K T Y V E K V A N G Q Y S H  
 \* L \* K Q \* R L M L K R W L M A N T P I

1201/401 1231/411  
 TTT GGT TTT ACT GGC GGC AAT TGA TTG TAT TGA TGA TAC TAA GCT TGT GAA GCA GAT AAT  
 F G F T G I \* L Y \* \* Y \* A C E A D N  
 L V L L A A F D C I D D T K L V K Q I I  
 W F Y W R H L I V L M I L S L \* S R \* S

1261/421 1291/431  
 CAT ATC AGA AAT TAT CAG TTC ATT GCC TAG CAT AGT AAA TGA CAA ATA TGG AAG GAA GGT  
 H I R H Y Q F I A \* H S K \* Q I W K E G  
 I S E I I S S L P S I V N D K Y G R K V  
 Y Q K L S V H C L A \* M T N M E G R S

1321/441 1351/451  
 CCT ATT GTA CTT ACT AAG CCC CAG AGA TCC TGC ACA TAC AGT ACG AGA AAT CAT TGA AGT  
 P I V I L T K P Q R S C T Y S T R N H \* S  
 L I Y L L S P R D P A H T V R E I I E V  
 Y C T Y \* A P E I L H I Q Y E K S L K F

FIG. 19E

1381/461  
 TCT CCA AAA AGG AGA TGG AAA TGC ACA CAG TAA GAA AGA TAC AGA GGT CCG CAG ACG GGA  
 S A K R R R W K C T Q \* E R Y R G P Q T G  
 L Q K K G D G N A H S K K D T E V R R R E  
 C K K E M E M H T V R K I Q R S A D G S  
 1441/481  
 GGT CCT AGA ATC CAT TTC TCC AGC TTT GTT AAG CTA CCT GCA AGA ACA CGC CCA AGA AGT  
 A P R I H I S P A L L C \* A T C K N T P K K W  
 L L K S I S P A L L C \* A T C K N T P K K W  
 S \* N P P F L Q L C \* A T C K N T P K K W  
 1501/501  
 GGT GCT AGA TAA GTC TGC GTG TGT GTT GGT GTC TGA CAT TCT GCG ATC TGC CAC TGG AGA  
 G A R \* V C V C V L V S D I L G S A T G D  
 V L D K S L R V C W C L T F W D L E T  
 C \* I S L R V C W C L T F W D L E T  
 1561/521  
 CCT TCA GCC TAC CAT GAA TGC CAT CGC CAG CTT GGC AGC AAC AGG ACT GCA TCC TGG TGG  
 R S A Y H C H R Q L G S N R T A S W W  
 V Q P T H N A I A S L A A T G L H P G G  
 F S L P \* M P S P A W Q Q Q D C I L V A

FIG. 19F

FIG. 19C

1921/641  
 TCT ACT TGA AAA ACT GAG CAC ATA GGT GGA AAG AGT TAA GAG CAA GAT GGA ATG ATT TTT  
 S T \* K T E H I G G K S \* E Q D G M I F  
 L L E K L S T \* V E R V K S K M E \* F F  
 Y L K K H \* A H R W K E L R A R W N D F F  
 1981/661  
 TCT GTP CTC TGT TCT GTT TCC CAA TGC AGA AAA GAA GGG GTA GGG TCC ACC ATA CTG GTA  
 S V I C S V S Q C R K E G V G S T I L V  
 L P S V L F P N A E K K G \* G P P Y W \*  
 C S L F C F P M Q K R R G R V H T G N  
 2041/681  
 ATT GGG GTA CTC TGT ATA TGT GTT TCT TCT TAT ACG AAT CTA TTT ATA TAA ATT GTT  
 I G V L C I C V S S L Y T N L F I \* I V  
 L G Y S V Y V F L L C I R I Y L Y K L F  
 W G T L Y M C F F F V Y E S I Y I N C F  
 2101/701  
 TTT TTA AAT GGT  
 P I N G  
 P \* M  
 P K W

1951/651  
 TCT ACT TGA AAA ACT GAG CAC ATA GGT GGA AAG AGT TAA GAG CAA GAT GGA ATG ATT TTT  
 S T \* K T E H I G G K S \* E Q D G M I F  
 L L E K L S T \* V E R V K S K M E \* F F  
 Y L K K H \* A H R W K E L R A R W N D F F  
 2011/671  
 TCT GTP CTC TGT TCT GTT TCC CAA TGC AGA AAA GAA GGG GTA GGG TCC ACC ATA CTG GTA  
 S V I C S V S Q C R K E G V G S T I L V  
 L P S V L F P N A E K K G \* G P P Y W \*  
 C S L F C F P M Q K R R G R V H T G N  
 2071/691  
 ATT GGG GTA CTC TGT ATA TGT GTT TCT TCT TAT ACG AAT CTA TTT ATA TAA ATT GTT  
 I G V L C I C V S S L Y T N L F I \* I V  
 L G Y S V Y V F L L C I R I Y L Y K L F  
 W G T L Y M C F F F V Y E S I Y I N C F

FIG. 19H

FIG. 20A

1	GGATCCCTCTGTGAGGCCGATT	ATG	CAG	GCC	TAG	ACCGCACGTGACCA	CTTCGAGAGCAAGTTGCCTGCGAGTTTCTCTGCCCCGAGAAAAGA	95																			
1		M	Q	A	*			4																			
96	A	ATG	GAG	GCA	A	T	TAC	TTA	ATA	TGG	TAT	GAG	AGG	ATC	TTT	TGA	CGGCAATAG	ATG	CGC	CAT	CTC	CGA	GAA	AAA	ATC	172	
1		M	E	A	I	Y	L	I	Y	W	Y	E	R	I	F	*		M	R	H	L	R	E	K	I	8	
173	TAG	ACAATAACAGCGACAAATTAACCTAAAGAGGATAGAAGATCGAGCAAAAAAATTTTAAAT	ATG	GGG	TCA	GTG	CGC	ATA	TTA	TAC	TAT															262	
9																	M	G	S	V	A	I	L	Y	Y	9	
263	AGG	AGT	TAA	AGAGTAAAGTTGAGTGTAAAGTGTAGAAATT	ATG	ATT	GAA	CTC	CGA	AAC	TAA	CGCCGGAAT	ATG	GGT	GGC	AAA	CGC									346	
10		R	S	*		M	I	E	L	R	N	*		M	G	K	A									5	
347	GAC	AGC	TTTT	TGA	TATATAATCGATCGCTCTCGTAGTTGATATACCTCTCTTGCTTATCTTTTCCCTGTATATAGTAT	ATG	TGT	ACA	TAC																	435	
6		D	S	F	*								M	C	T	Y										4	
436	AGA	TAC	GAA	TAT	ACC	TCA	GT	AGT	TTG	TTT	TAA	CATTAAATATTAACAGTTGCCAGTAGCAAAAAGAATATATCCATTCGAGC													524		
5		R	Y	E	Y	T	S	V	S	L	F	*														15	
525	TTT	TTCTGTCATTAATCAACATTAACAGTCTCTCATAGACGGTACCTTACTTTTCCCTTAATATTAATAACTAGTATAGTCGCACATACTTAAC																								624	
625	TCGTCTCTCTTAACACATA	ATG	AAA	ATT	TCC	GCA	GCT	TTA	ATA	TTG	TCT	TCC	CTT	TCT	TCT	GTC	GCA	TTT	TCT	GCC	CCT					704	
1		M	K	I	S	A	A	L	I	L	S	S	L	S	S	V	A	F	S	A	P					20	
705	GCA	CCT	GCT	CCA	GCG	GAC	AGT	CAT	CAT	GAA	GAT	CAC	AAA	GAA	AAA	CCA	GCG	GT	GTC	ACT	GTC	ACT	CAA			779	
21		A	P	A	P	A	D	S	H	E	D	H	H	K	D	E	K	P	A	V	T	V	T	Q		45	
780	TAC	ATA	GAT	TCC	AAT	GCC	GCT	ACT	AGT	ACT	GTA	GAA	TCT	GCT	GCT	ACT	ACC	ACT	ACA	TTG	TCC	TCA	TCT	GAG	AAG	845	
46		Y	I	D	S	N	A	A	T	S	T	V	E	S	A	A	T	T	T	C	L	S	S	E	K	70	
855	GAT	ACC	TCT	GAA	CAG	AAG	CGT	GAT	GGC	GGA	TTC	CAA	GAT	GGT	ACT	GTC	AAA	TGT	TCG	GAC	TTT	CCT	TCT	GTA	AAC	929	
71		D	T	S	E	Q	K	R	D	G	G	F	Q	D	G	T	V	K	C	S	D	F	P	S	N	95	
930	GGT	ATA	GTT	TCC	TTG	GAC	TGG	CTA	GGA	TTT	GGT	GGA	TGG	GCC	TCT	GTC	ATG	GAC	ATG	GAT	GCC	AAC	ACT	TCG	TCC	1004	
96		G	I	V	S	L	D	W	L	G	F	G	G	W	A	S	V	M	D	M	D	A	N	T	S	120	
1005	GAA	TGT	AAG	GAT	GGC	TAC	TAC	TGT	TCT	TAT	GCA	TGT	GAA	CCT	GGA	ATG	TCA	AAG	ACT	CAA	TGG	CCT	TCT	GAC	CAA	1079	
121		E	C	K	D	G	Y	Y	C	S	Y	A	C	E	P	G	M	S	K	T	Q	W	P	S	D	Q	1456
1080	CCA	AGC	GAT	GGT	AAA	TCT	GTT	GGT	GGT	CTT	TAT	TGT	AAA	AAT	GGT	TAC	TTG	TAC	CGT	ACC	AAC	ACT	GAT	ACC	AGC	1154	
146		P	S	D	G	K	S	V	G	G	L	Y	C	K	N	G	Y	L	Y	R	T	N	T	D	T	S	170
1155	GAT	TTA	TGT	TCT	ACG	GAT	GAA	ACA	TCT	GCT	AAG	GCC	ATT	AAC	AAA	AAG	TCT	GAC	TCC	ATT	GCT	CTA	TGT	AGG	ACG	1229	
171		D	I	C	S	T	D	E	T	S	A	K	A	I	N	K	S	D	S	I	A	L	C	R	T	195	
1230	GAT	TAC	CCA	GGA	TCT	GAA	AAC	ATG	GTG	ATT	CCC	ACA	GTG	GTT	GAT	GGT	GGA	GAT	TCA	CAA	CCA	ATT	TCA	GTC	GTT	1304	
196		D	Y	P	G	S	E	N	M	V	I	P	T	V	V	D	G	G	D	S	Q	P	I	S	V	220	

FIG. 20A

[illegible][illegible]

FIG. 20B



FIG. 21A

1265	ATT TCT ATT GAC TGG ATT GGC GAG GGT GGA TGG TCC GGT GTG GAA AAC ACC GAC ACT TCC ACT GGC GGT TCA TGC	1339
235	I S I D W I G E G G W S G V E N T T D T S T G G C	259
1340	AAG GAG GGG TCC TAC TGT TCC TAC TCC TGC CAA CCA GGT ATG TCT AAG ACC CAA TGG CCA TCC GAT CAA CCA TCT	1414
260	K E G S Y C S Y S C Q P G M S K T Q W P S D Q P S	284
1415	GAC GGT AGA TCT GTC GGG GGT TTT TTT TGT AAA AAT GGT TAT TTG TAC CGT TCT AAC ACT GAC GCG GAT TAC TTA	1489
285	D G R S V G G G L L C K N G Y L Y R S N T D A D Y L	309
1490	TGT GAA TGG GGT GTC GAG GCT GCC TAT GTT GTT TCT AAA CTA AGC AAG GGT GTC GCC ATT TGC AGA ACC GAC TAC	1564
310	C E W G V E A Y V V S K L S K G V A I C R T D Y	334
1565	CCG GGC ACT GAA AAC ATG GTT ATC CCA ACC TAT GTT GAA GGG GGT AGC TCT TTG CCA TTG ACC GTT GTT GAC CAA	1639
335	P G T E N M V I P T Y V E G S S L P L T V D Q	359
1640	GAT ACT TAC TTT ACT TGG GAA GGC AAA AAG ACA TCT GCT CAA TAC TAC GTT AAT AAC GCC GGC GTC TCA GTT GAA	1714
360	D T Y F T W E G K K A Q Y Y V N N A G G G V S V E	384
1715	GAT GGG TGT ATC TGG GGT ACT TCT GGA TCT GGT ATT GGT AAC TGG GCA CCA TTA AAC TTT GGT GGT GGC TCC ACT	1789
385	D G C I W G T S G S G I G N W A P L N F G A G S T	409
1790	GGT GGA GTG ACA TAC TTA TCA TTG ATT CCT AAC CCA AAC AAC AGC GAC GCA TTG AAC TAC AAC GTC AAG ATA GTT	1864
410	G V T Y L S L I P N N S D A L N Y N V K I V	434
1865	GCT GCT GAT TCA TCC AAT GTC ATC GGT GAA TGT GTT TAC GAA AAT GGT GAG TTC TCT GGC GGT GCT GAC GGG	1939
435	A A D S S N V I G E C V Y E N G E F S G A D G	459
1940	TGT ACC GTC TCT GTT ACT TCC GGT AAA GCT CAT TTC GTC TTA TAC AAT TAA GCTACGTGACTACTTTTCTTTT	2022
460	C T V S V T S G K A H F V L Y N *	476
2023	CTTTTTCGAACACATCTCACCCCTTATACCTCACACATCACT ATG GTC CCC TTT TCT TCT TTT TAC CGA TAT TTA TAC TGT CCA CCT	2108
1	M V P F S F S F Y R Y L Y C P P	14
2109	TTT TCT TTT CGT TAA TGGCTCA ATG TTT CTG TAC CAT TAT C	2150
15	F S F R * M F L Y H Y	6

FIG. 21B

FIG. 22A

Pile.1 (Nca3)	251	.....	.....SDFPSV	NGIVSLDWLG	FGGWASVMDM	DANTSSECKD	300
Pile.1 (Uth1)		.....	.....SDFPSG	QGAVSLDWLG	IGGWASIMDM	NGNTATSCQD	
Pile.1 (Sag1)		SATKSS'TSGT	SPSTSTSTST	SSTSSSSSSS	SSSSSSSSNT	DTSTGGSCKE	
Consensus		-----	-----S-	-----S-	-----S-	-----T-C-	
		301					
Pile.1 (Nca3)		GYCYCYACIP	GMSKTQWPSD	QPSDGKSVGG	LYCKNGLYLYR	TNTD'TSDLCS	350
Pile.1 (Uth1)		GYCYCYACSP	GYAKTQWPSI	QPSDGRSVGG	LYCKNGKLYR	SNTD'TNSLCV	
Pile.1 (Sag1)		GSYCSYSCQP	GMSKTQWPSD	QPSDGRSVGG	LLCKNGLYLYR	SNTDADYCLE	
Consensus		G-YCSY-C-P	G--KTQWPS-	QPSDG-SVGG	L-CKNG-LYR	-NTD----LC-	
		351					
Pile.1 (Nca3)		TDE'TSAKAIN	KKSDSIALCR	TDYPGSENMV	IPTVVVGSDS	QPISVVDEDT	400
Pile.1 (Uth1)		EGOGSAOAVN	KVSGSIAICG	TDYPGSENMV	VPTVVVGAGSS	QP INVIKEDS	
Pile.1 (Sag1)		WGV EAA YVVS	KL SKGVAICR	TDYPGTENMV	IPT YVEGGSS	LPITVV DODT	
Consensus		-----A-----	K-S---A-C-	TDYPG-ENMV	-PT-V--G-S	-P--V---D-	
		401					
Pile.1 (Nca3)		YYQWQGKKTS	AQYYINNAGV	SAEDGCIWGT	SGSDVGNWAP	LVI GAGSTNG	450
Pile.1 (Uth1)		YYQWQGKKTS	AQYYVNNAGV	SVEDGCIWGT	EGSGVGNWAP	VVLGAGYTDG	
Pile.1 (Sag1)		YPTWEGKKTS	AQYYVNNPGV	SVEDGCIWGT	SGSGIGNWAP	LNFGAAS'TGG	
Consensus		Y--W-GKKTS	AQYY-NN-GV	S-EDGCIWGT	-GS--GNWAP	---GA--T-G	

FIG. 22B

Pile.1 (Nca3)	451	ETYL	SLIPNP	NSNQANFNV	KIVASDG.AN	VQGSCAYEDG	SFTG	DGSDGC	500
Pile.1 (Uth1)		ETYL	SLIPNP	NNKEAPNFI	KIVA'DG.SI	VNGACSYENG	VYSG	SGSDGC	
Pile.1 (Sag1)		VTYL	SLIPNP	NNSDALNYNV	KIVAADDSSN	VIGECVYENG	EFSG	GADGC	
Consensus		-TYLS-	IPNP	N--A-N-N-	KIVA-D---	V-G-C-YE-G	---	G-G-DGC	
Sun4		...	SLIPNP	NNGNALNFNV	KIVAADDSSST	VNGECIYENG	SFSS	GGSDGC	
Pile.1 (Nca3)	501	TVSV	VLGSAE						515
Pile.1 (Uth1)		TVSV	VTSGSAN	FVFYZ					
Pile.1 (Sag1)		TVSV	VTSGKAI	FVLYN					
Consensus		TVSV	-SG-A-	FV-Y-					
Sun4		TVSV	TAGKAK	FVLY.					

FIG. 22C

## EIGHT REPEATS IN UTH4

193	L	a	t	D	q	F	G	c	r	F	L	Q	K	k	L	E
231	L	i	l	D	p	F	G	n	y	L	V	d	K	i	c	D
267	I	s	i	n	q	Y	G	t	r	s	L	Q	K	i	I	D
310	L	i	n	D	I	n	G	n	h	V	I	Q	K	c	I	f
348	I	s	t	H	k	h	G	c	c	V	L	Q	K	i	L	s
384	L	i	n	D	q	F	G	n	y	I	I	Q	f	i	L	D
422	L	s	c	l	k	F	s	s	n	V	V	e	K	f	I	K
487	L	i	r	D	n	F	G	n	y	A	L	Q	t	i	L	D



HYDROPHOBIC



CHARGED

FIG. 23

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UTH4	LatDqFGCRFLQKkLE	1
YGLO23	LckDqHGCRFLQKqLD	
PUMILIO	FsqDqHGSRFIQQkLE	
HUMAN	FsqDqHGSRFIQLkLE	
	LilDpFGNYLIQKiCD	2
	LmiDsFGNYLIQKiLE	
	LmiDvFGNYVIQKfFE	
	LmrDvFGNYVIQKfFE	
	IsiNqYGTRSLQKiID	3
	IsiNpHGTRALQKiIE	
	LalQmYGLRVIQKqLE	
	LalQmYGLRVIQKqLE	
	LinDlNGNHVIQKcIF	4
	LskDlNGNHVIQKcLQ	
	CvkDqNGNHVVQKcIE	
	CvkDqNGNHVVQKcIE	
	IstHkHGCCVLQKiLS	5
	IatHrHGCCVLQRcLD	
	LstHpYGCRVIQRiLE	
	LstHpYGCRVIQRiLE	
	LinDqFGNYIIQFiLD	6
	LtlDpFGNYVVQYiIT	
	LiQDqYGNyVIQHvLE	
	LvQDqYGNyVIQHvLE	
	LscIkFSSNVVEKfIK	7
	LsiHkFGSNVIEKiIK	
	LsqHkFASNVVEKcVT	
	VlsQhFASNVVEKcVT	
	LirDnFGNYALQTiLD	8
	LlnDsYGNyVLQTqLD	
	MmkDqYANYVVQKmID	
	MmkDqYANYVVQKmID	

FIG. 24